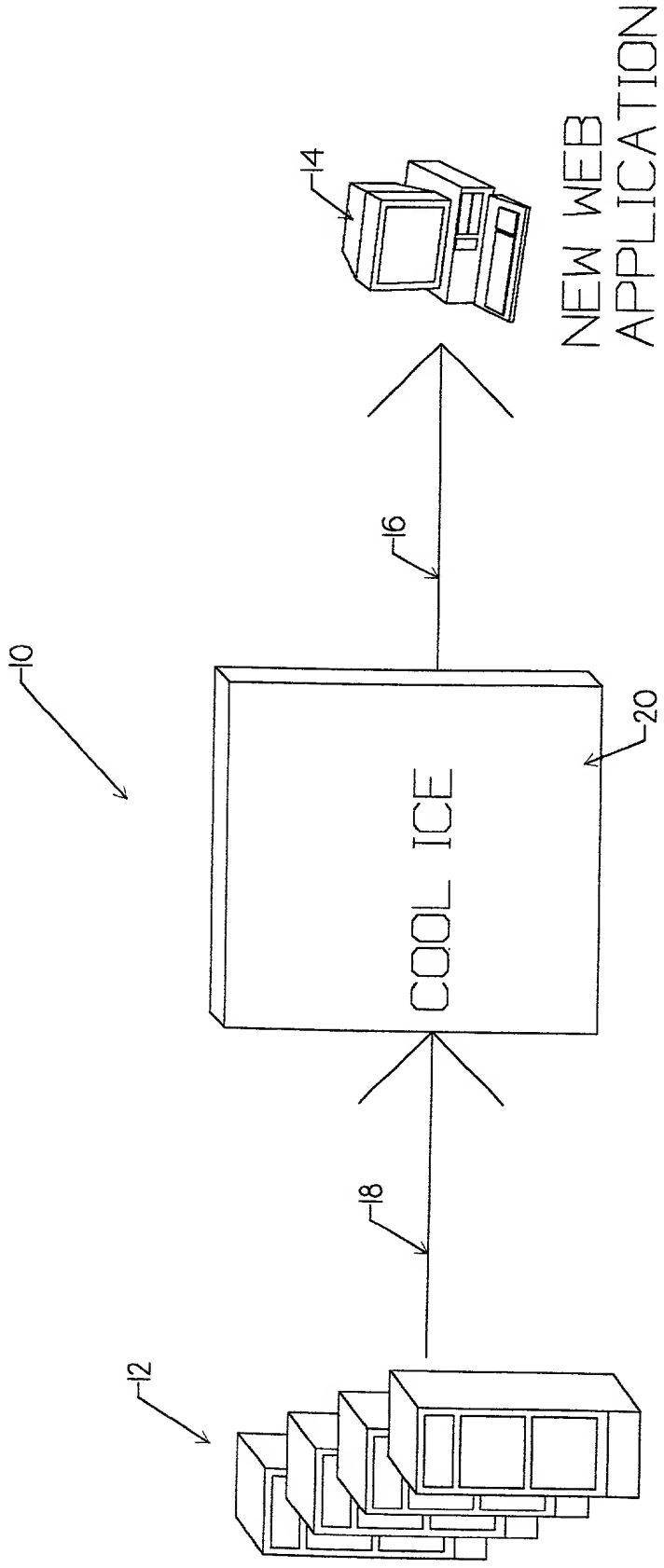
NEW WEB APPLICATION
14
16
10
COOL ICE
20
18
12
EXISTING DATABASES AND APPLICATIONS

FIG. 1

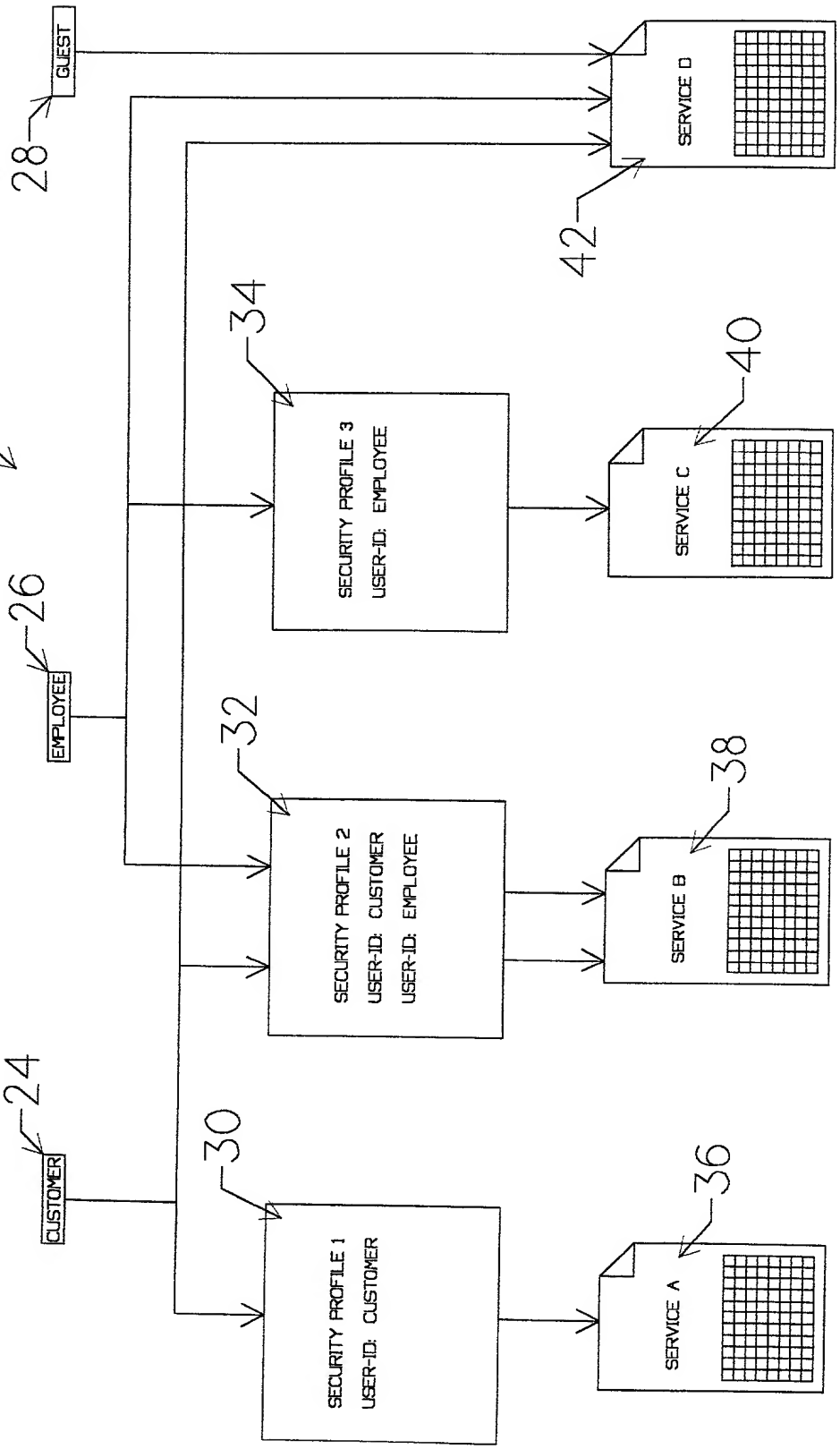
22
GUEST
28
CUSTOMER
24
EMPLOYEE
26
SECURITY PROFILE 1
USER-ID: CUSTOMER
30
SECURITY PROFILE 2
USER-ID: CUSTOMER
USER-ID: EMPLOYEE
32
SECURITY PROFILE 3
USER-ID: EMPLOYEE
34
SERVICE A
36
SERVICE B
38
SERVICE C
40
SERVICE D
42

FIG. 2

Express Mail No. ET970414370US
Customer Assignment No. 27516

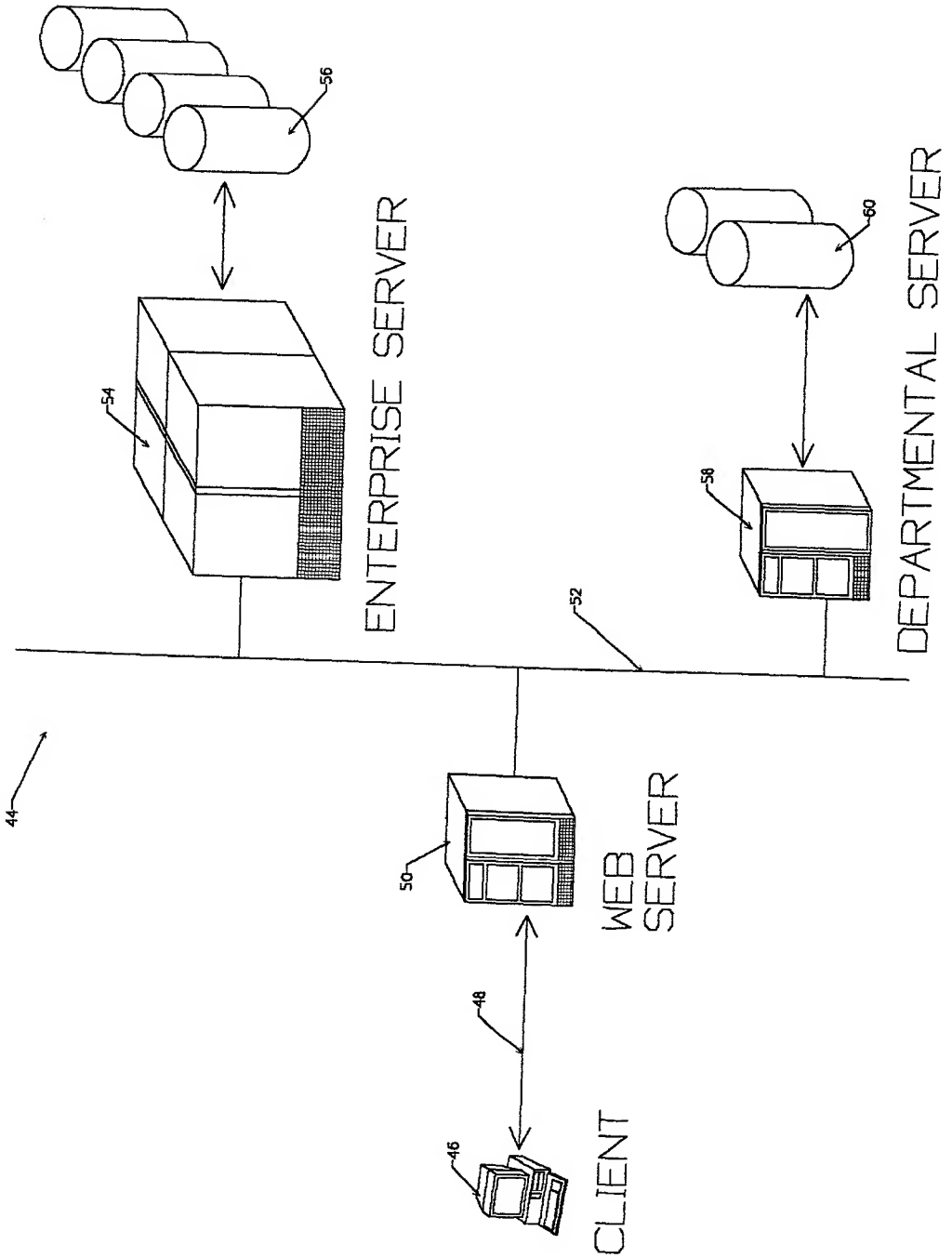

FIG. 3

Patent Application
Filing Date: 12/21/2001
Attorney's Docket No. RA-5447 (33012/335/101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing 04 of 40
Express Mail No. ET970414370US
Customer Assignment No. 27516

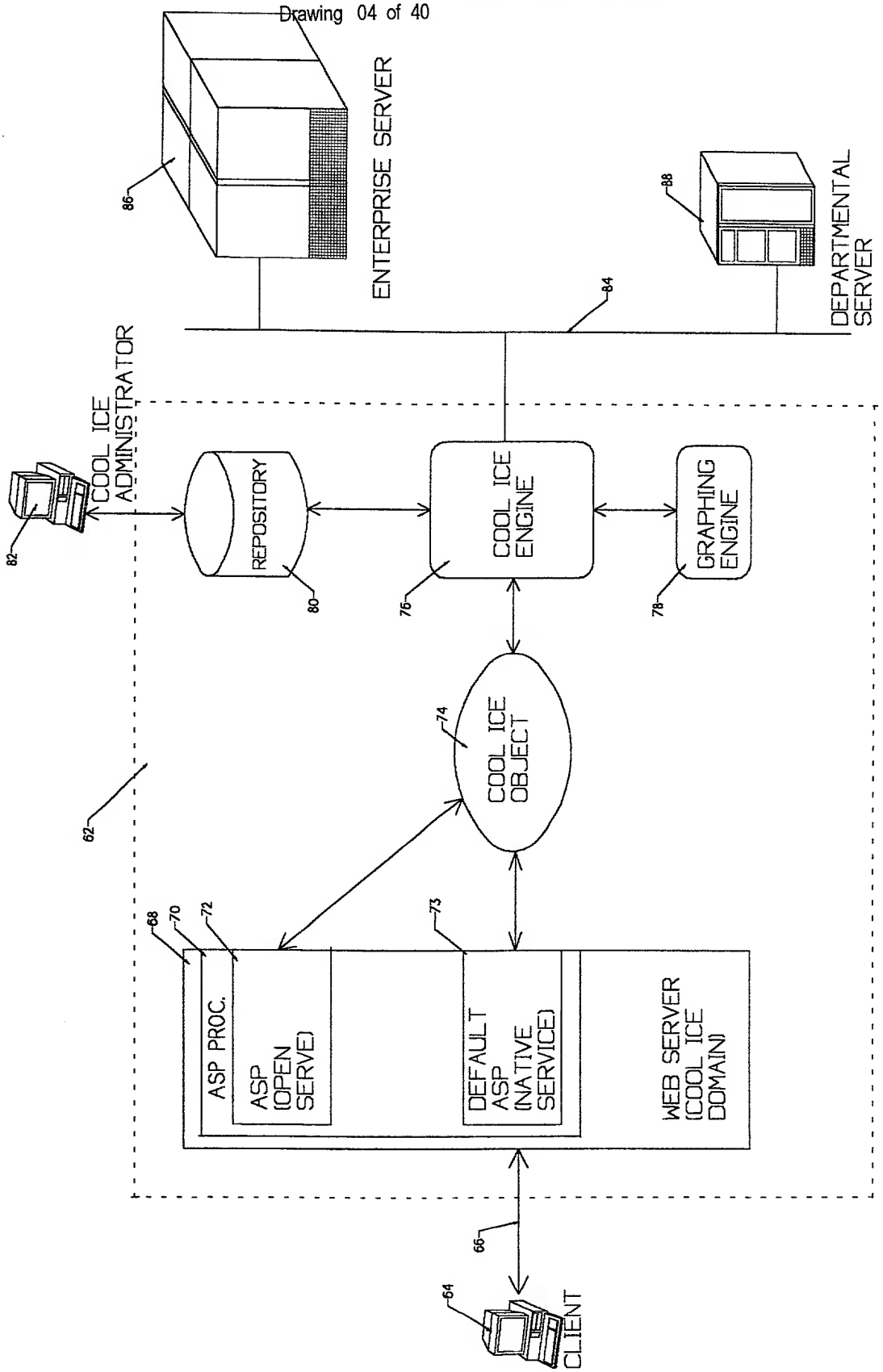

FIG. 4

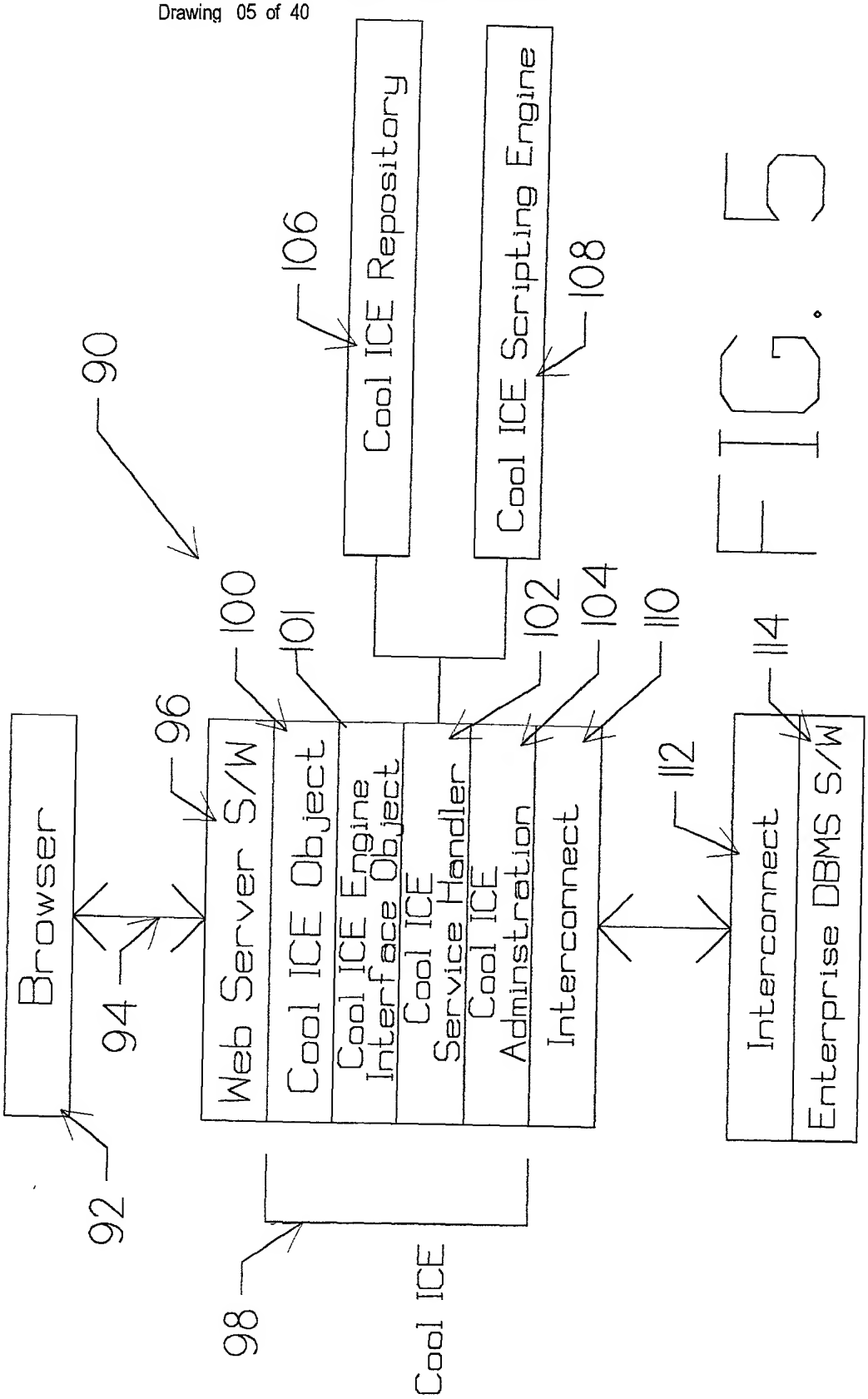
90
106
Cool ICE Repository
108
Cool ICE Scripting Engine
100
101
102
104
110
96
Web Server S/W
Cool ICE Object
Cool ICE Engine Interface Object
Cool ICE Service Handler
Cool ICE Adminstration
Interconnect
112
114
Interconnect
Enterprise DBMS S/W
Browser
94
92
98
Cool ICE

FIG. 5

Patent Application
Filing Date: 12/21/2001
Attorney's Docket No. RA-5447 (33012/335/101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing 06 of 40
Express Mail No. ET970414370US
Customer Assignment No. 27516

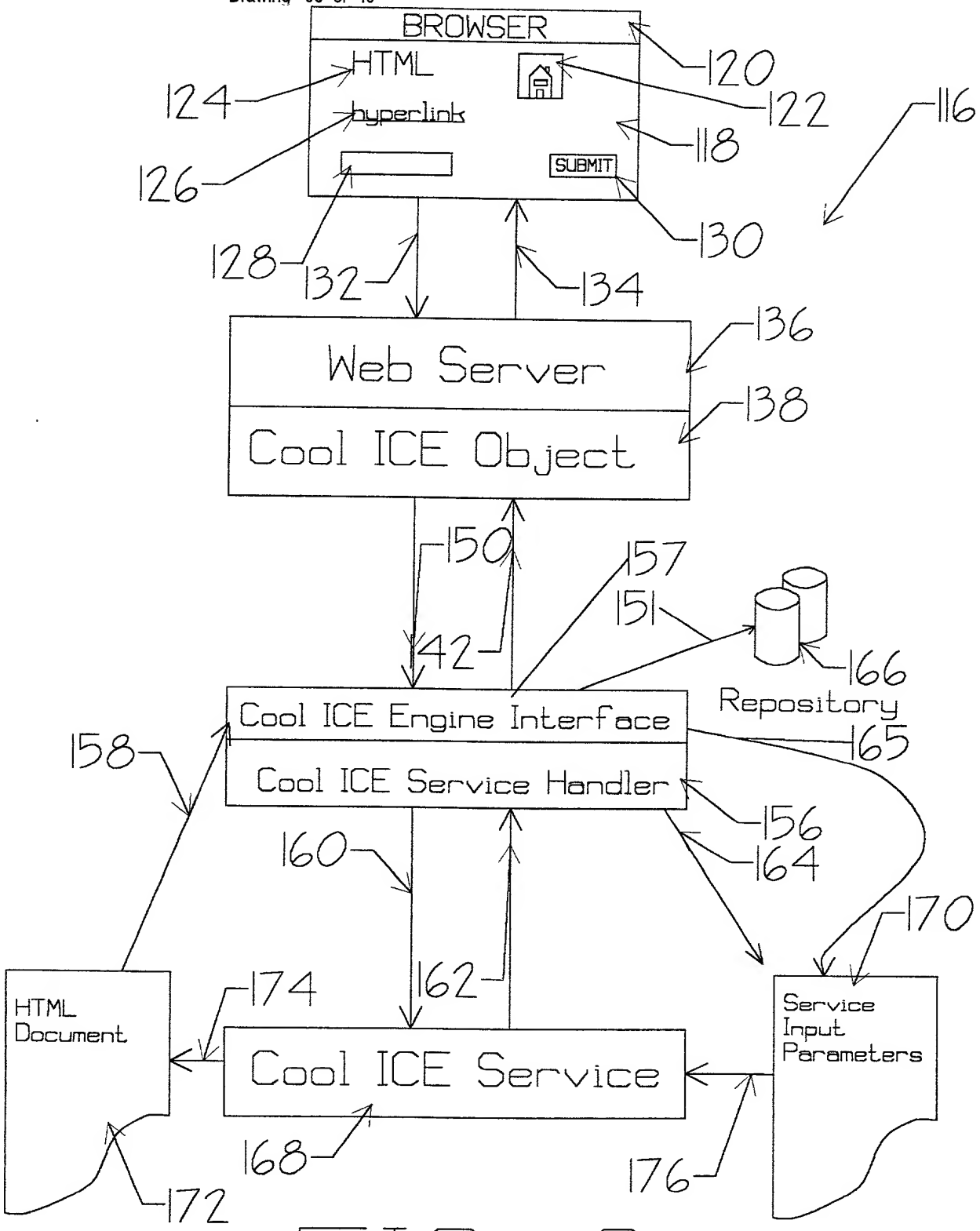

FIG. 6

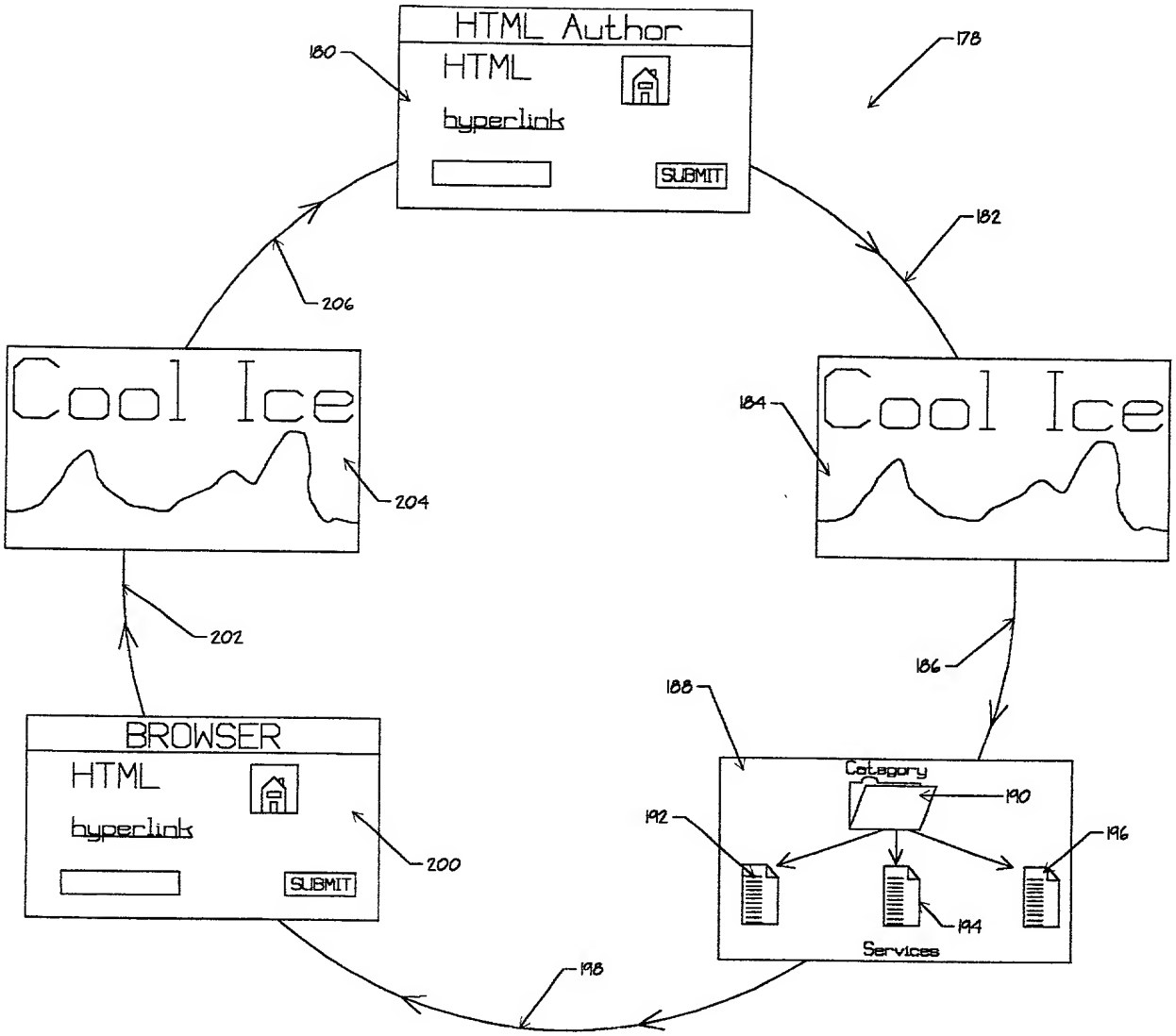
HTML Author
HTML
hyperlink
SUBMIT
180
178
182
206
Cool Ice
204
Cool Ice
184
202
186
188
BROWSER
HTML
hyperlink
SUBMIT
200
Category
190
192
196
194
Services
198

FIG. 7

Patent Application
Filing Date: 12/21/2001
Attorney's Docket No. RA-5447 (33012/335/101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing 08 of 40
Express Mail No. ET970414370US
Customer Assignment No. 27516

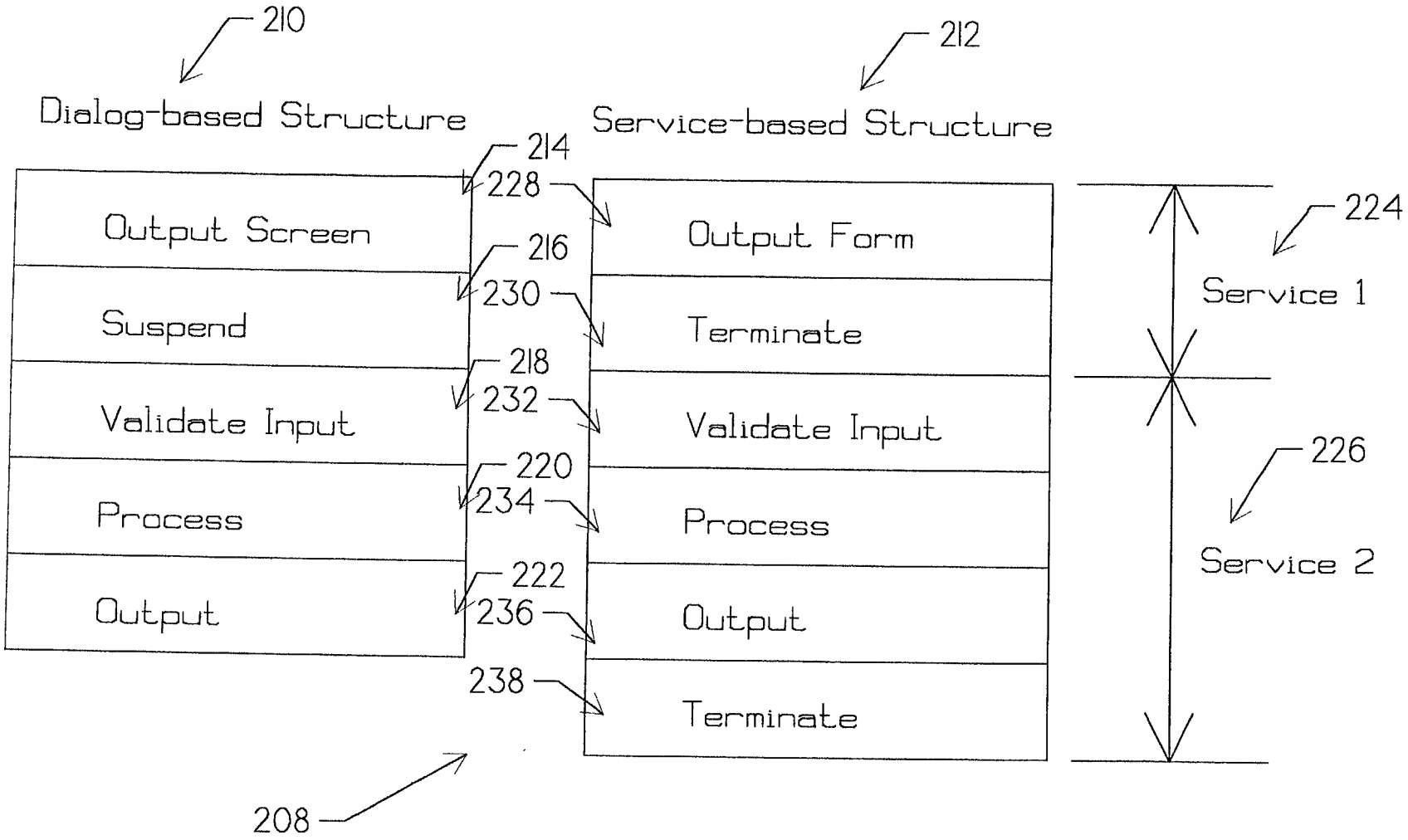

FIG. 8

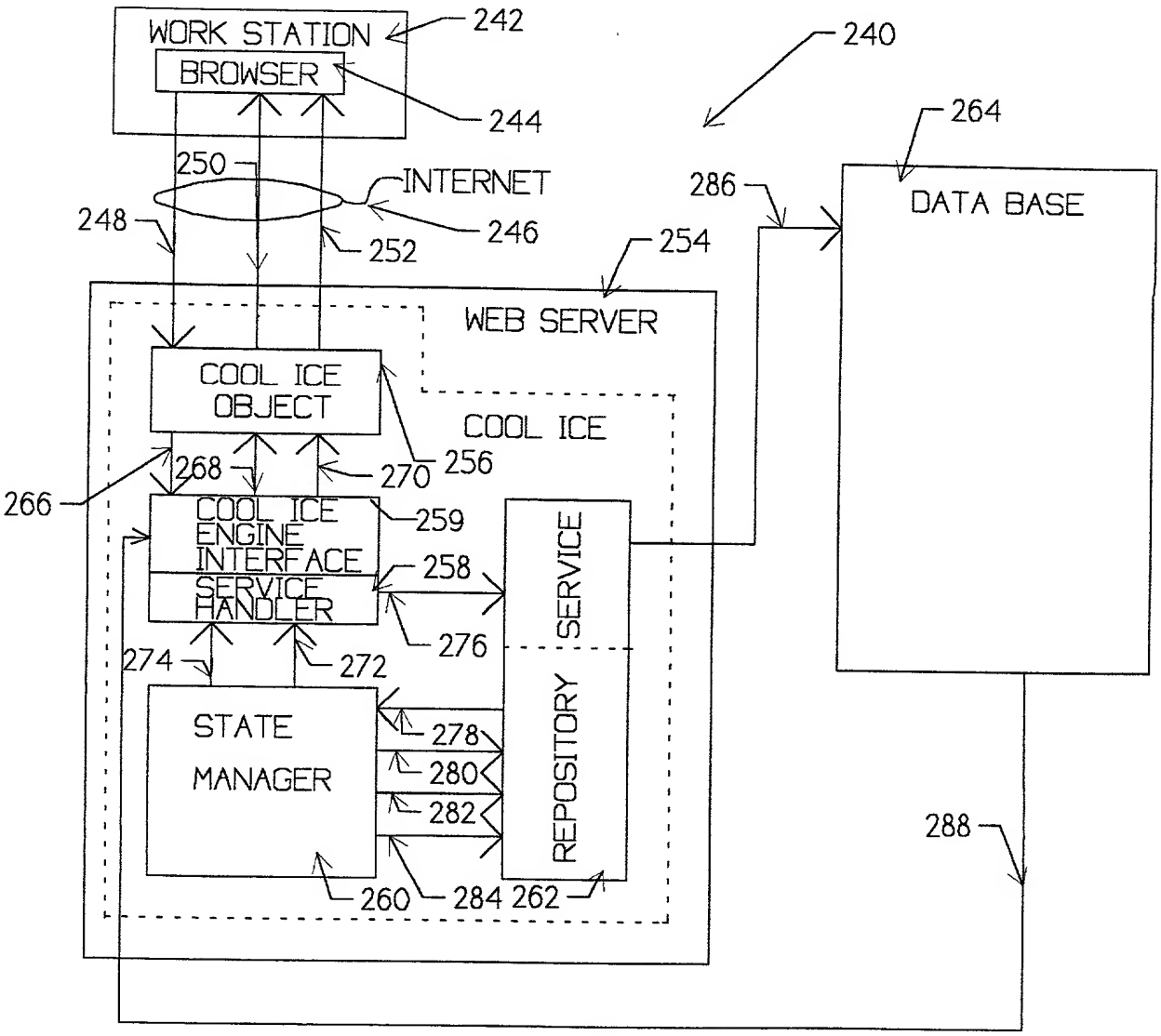
WORK STATION
BROWSER
242
244
240
264
250
INTERNET
286
DATA BASE
248
246
252
254
WEB SERVER
COOL ICE OBJECT
COOL ICE
268
270
256
266
COOL ICE ENGINE INTERFACE
259
SERVICE HANDLER
258
276
SERVICE
274
272
STATE MANAGER
278
280
282
REPOSITORY
288
260
284
262

FIG. 9

Express Mail No. ET970414370US
Customer Assignment No. 27516

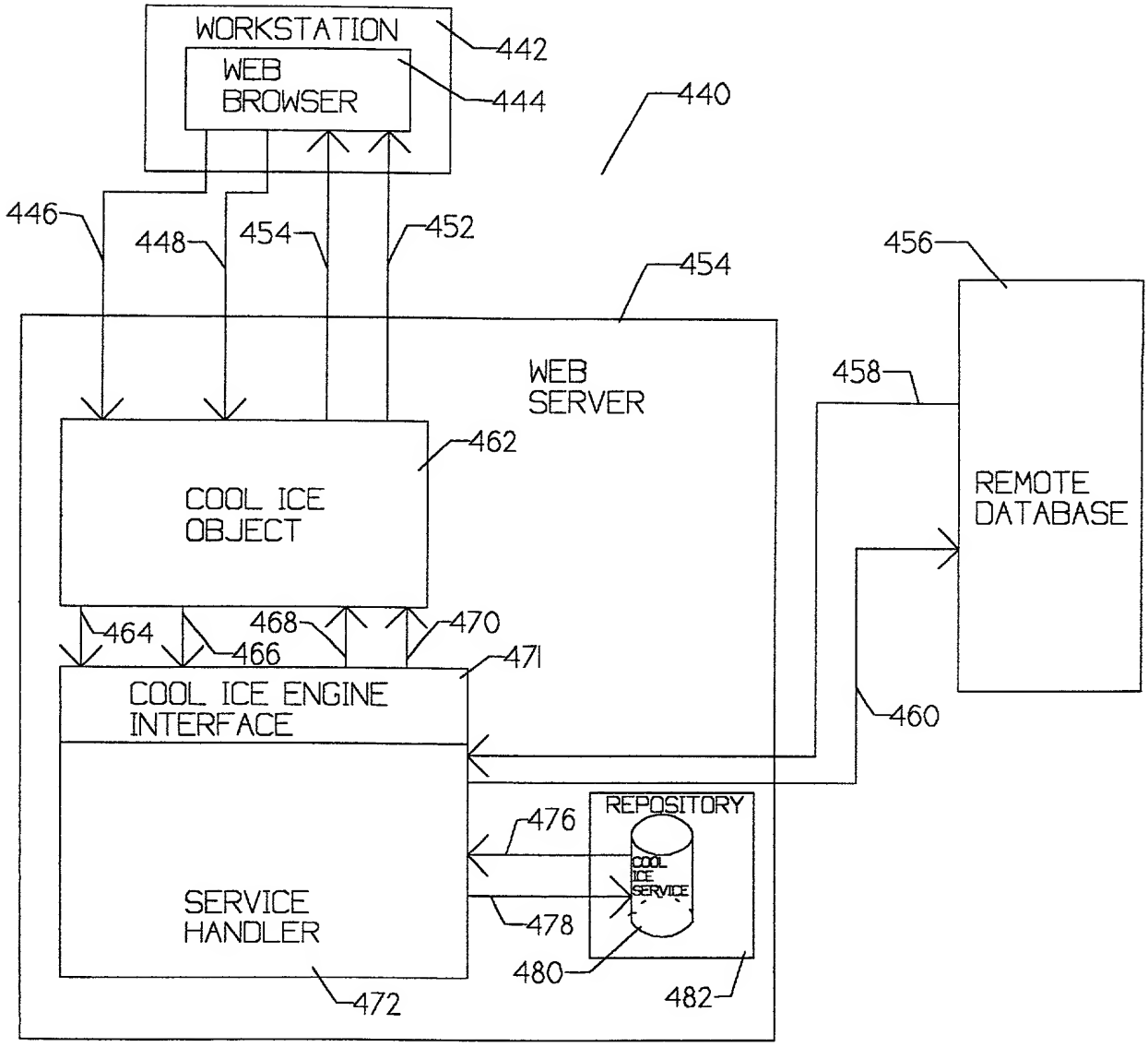

FIG. 10

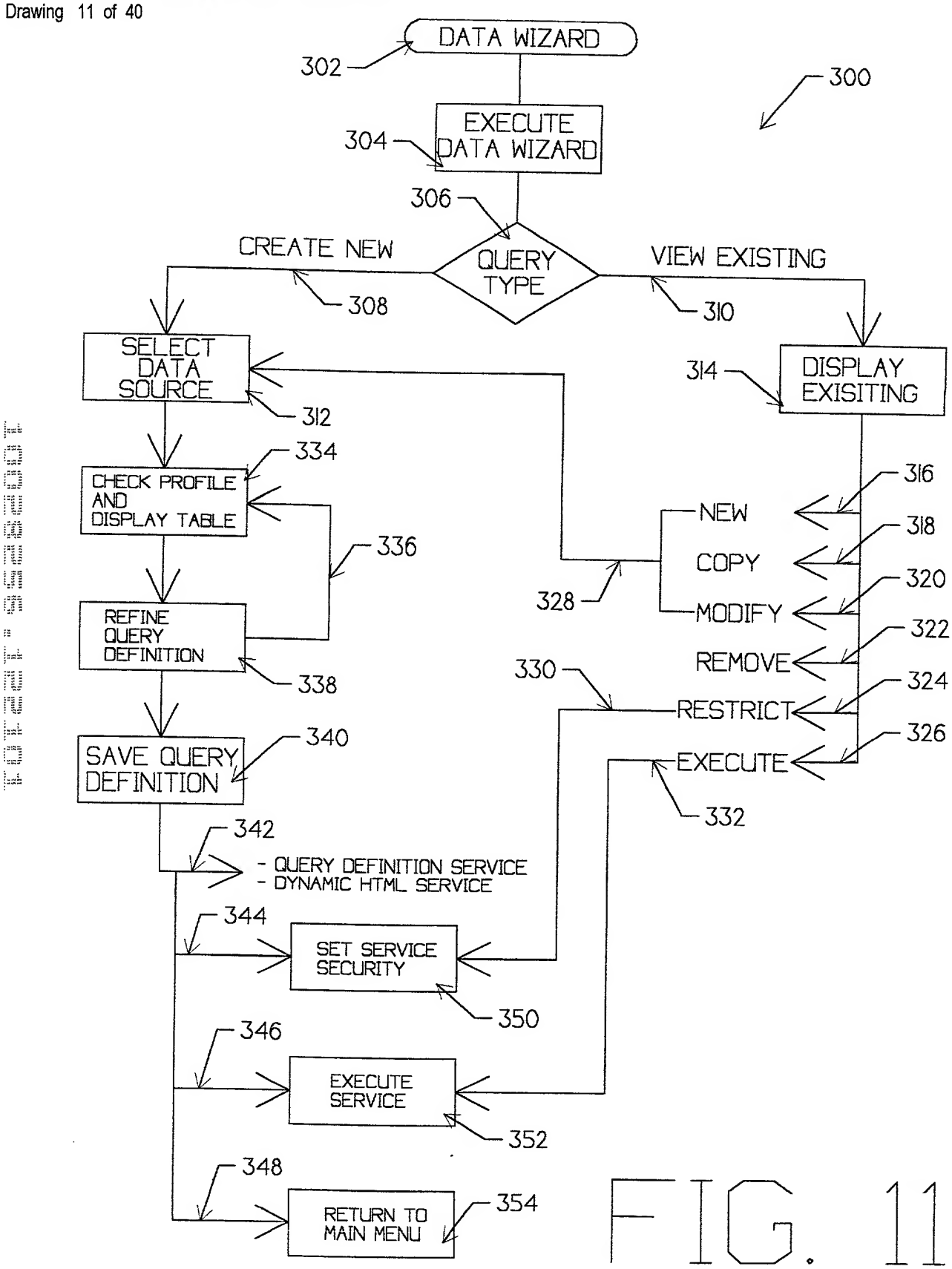
DATA WIZARD
302
300
EXECUTE DATA WIZARD
304
306
QUERY TYPE
CREATE NEW
308
VIEW EXISTING
310
SELECT DATA SOURCE
312
DISPLAY EXISITING
314
CHECK PROFILE AND DISPLAY TABLE
334
316
NEW
318
COPY
320
MODIFY
322
REMOVE
324
RESTRICT
326
EXECUTE
328
336
REFINE QUERY DEFINITION
338
330
SAVE QUERY DEFINITION
340
332
342
- QUERY DEFINITION SERVICE
- DYNAMIC HTML SERVICE
344
SET SERVICE SECURITY
350
346
EXECUTE SERVICE
352
348
RETURN TO MAIN MENU
354

FIG. 11

Patent Application
Filing Date: 12/21/2001
Attorney's Docket No. RA-5447 (33012/335/101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing 12 of 40
Express Mail No. ET970414370US
Customer Assignment No. 27516

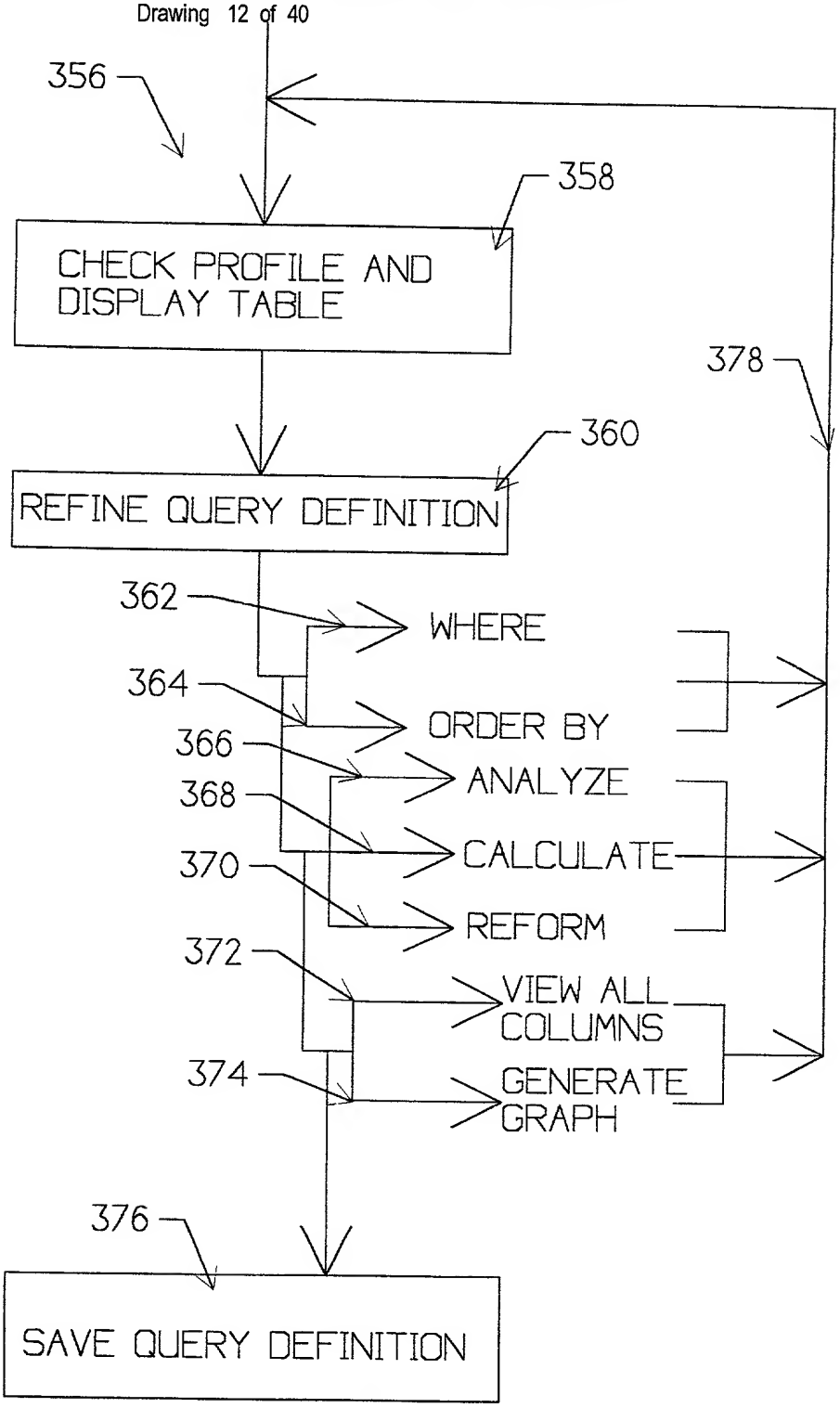

FIG. 12

Patent Application
Filing Date: 12/21/2001
Express Mail No. ET970414370US
Customer Assignment No. 27516
Attorney's Docket No. RA-5447 (33012/335/101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing 13 of 40

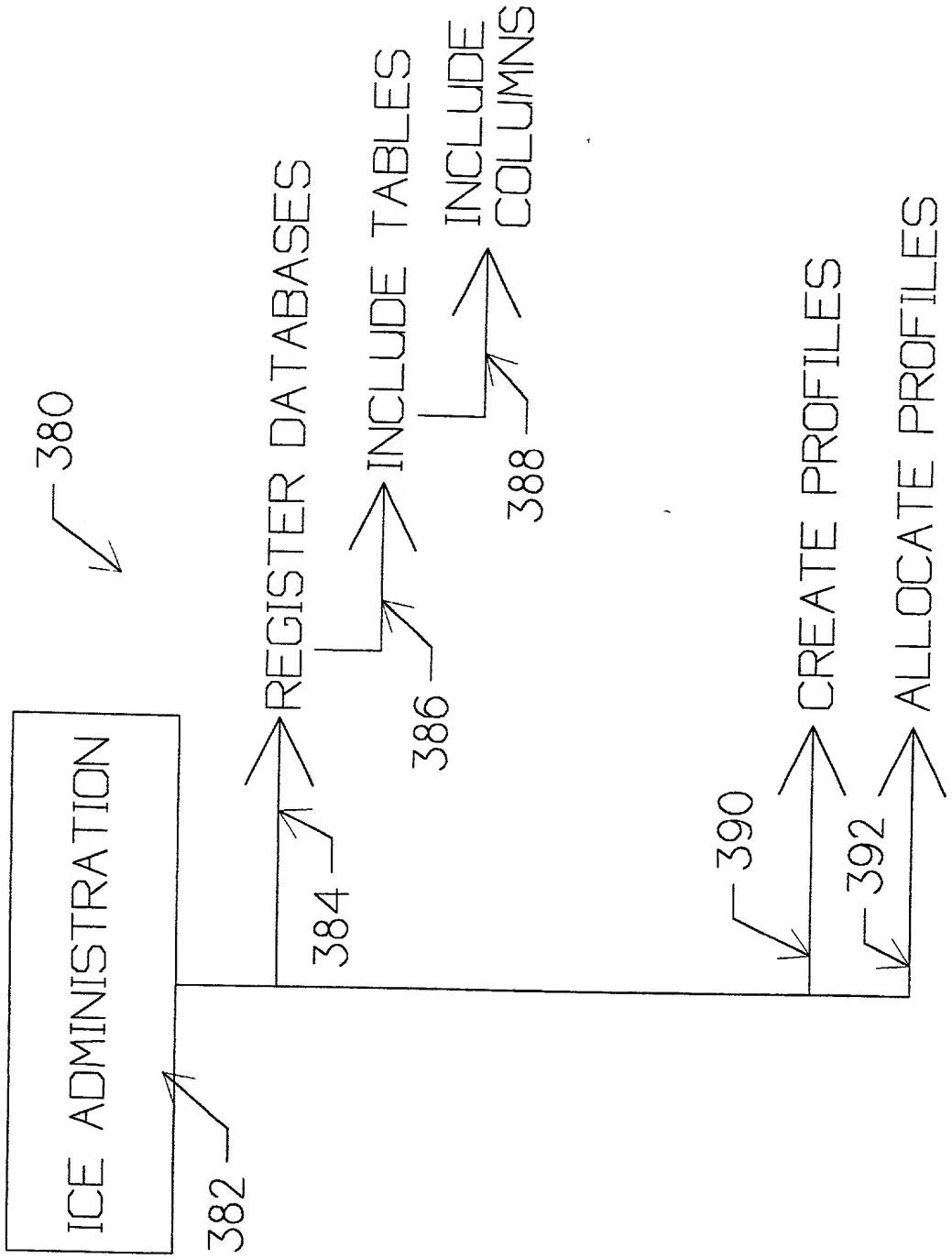

FIG. 13

Express Mail No. ET970414370US
Customer Assignment No. 27516

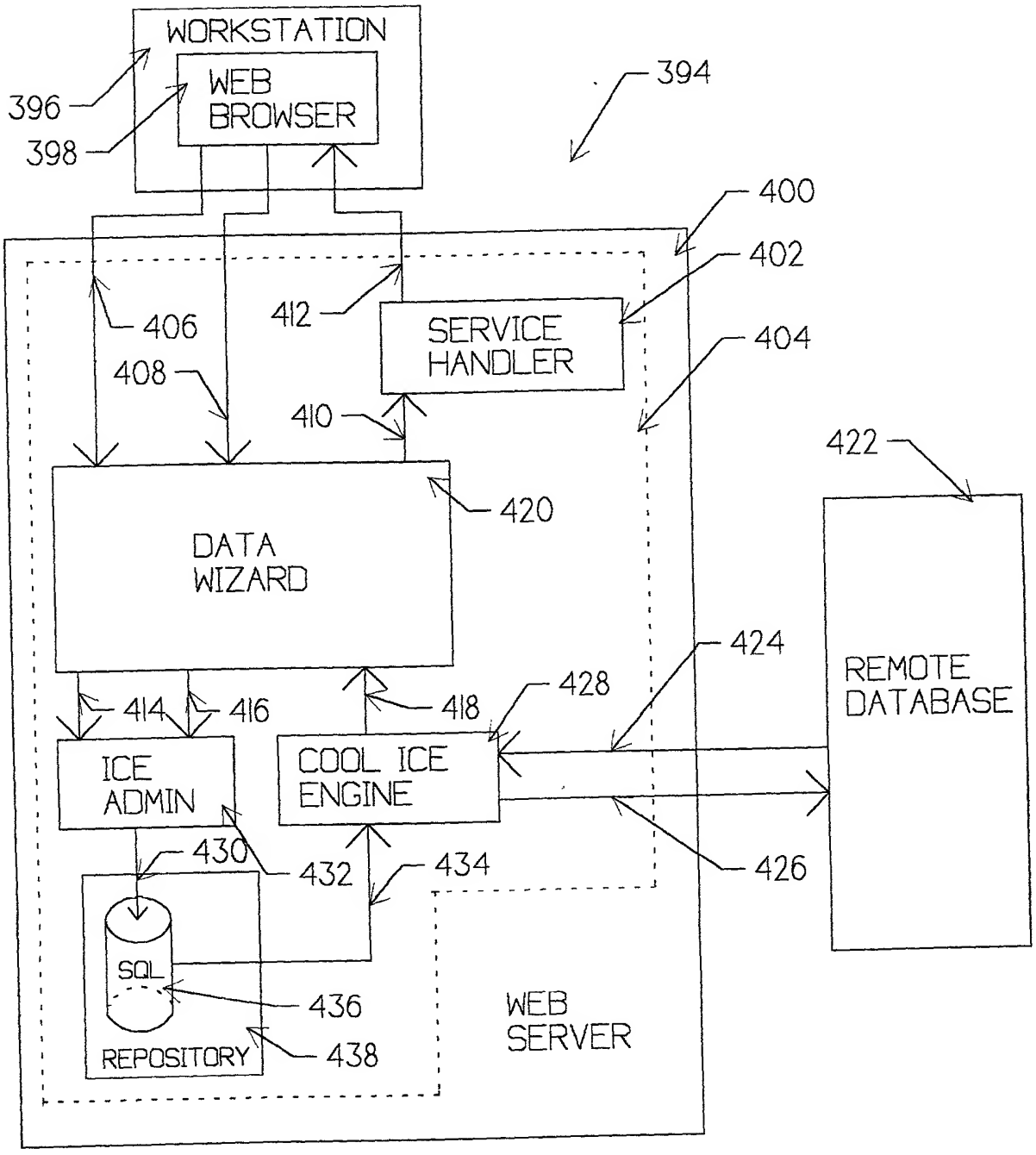

FIG. 14

Express Mail No. ET970414370US
Customer Assignment No. 27516

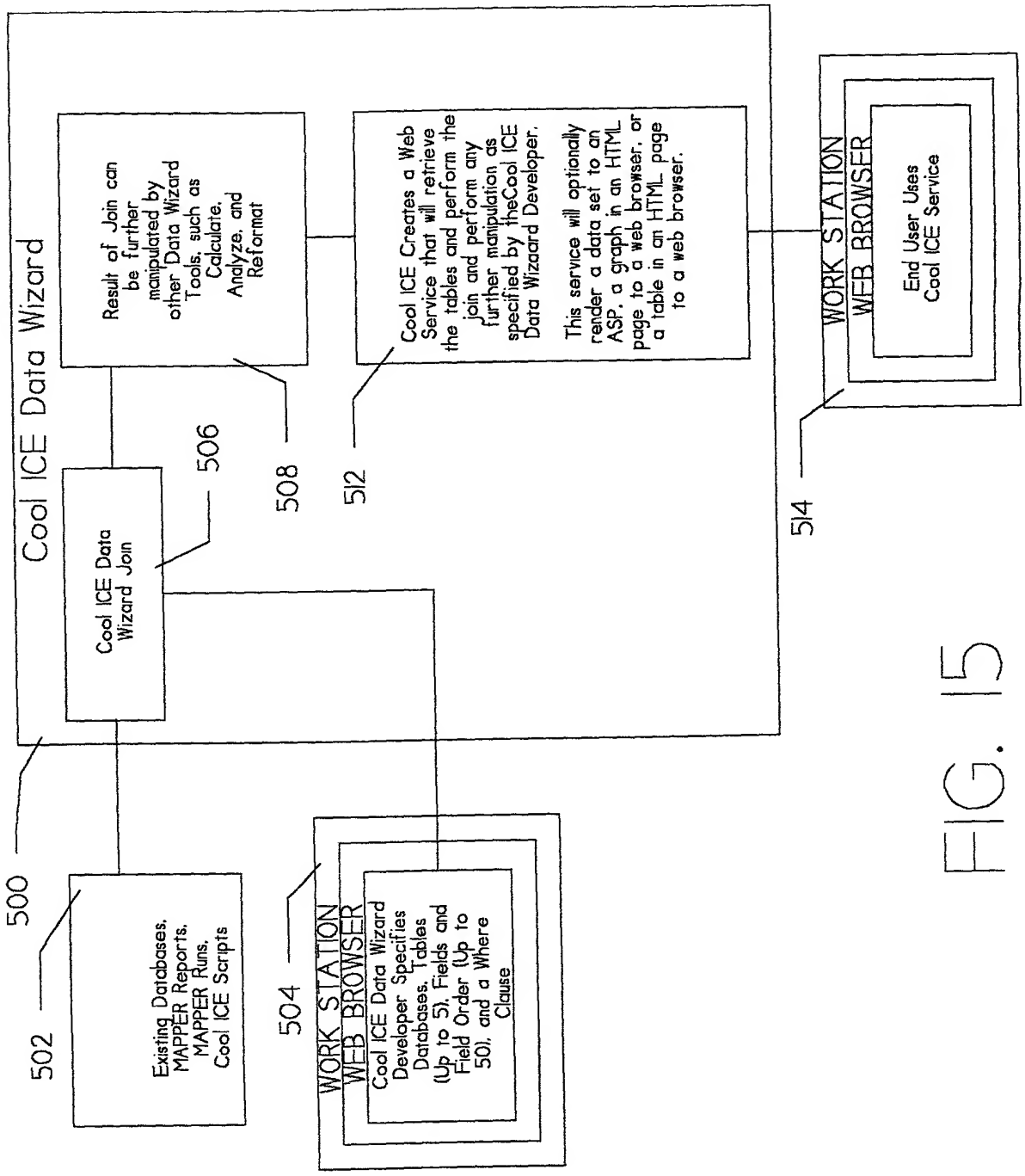

FIG. 15

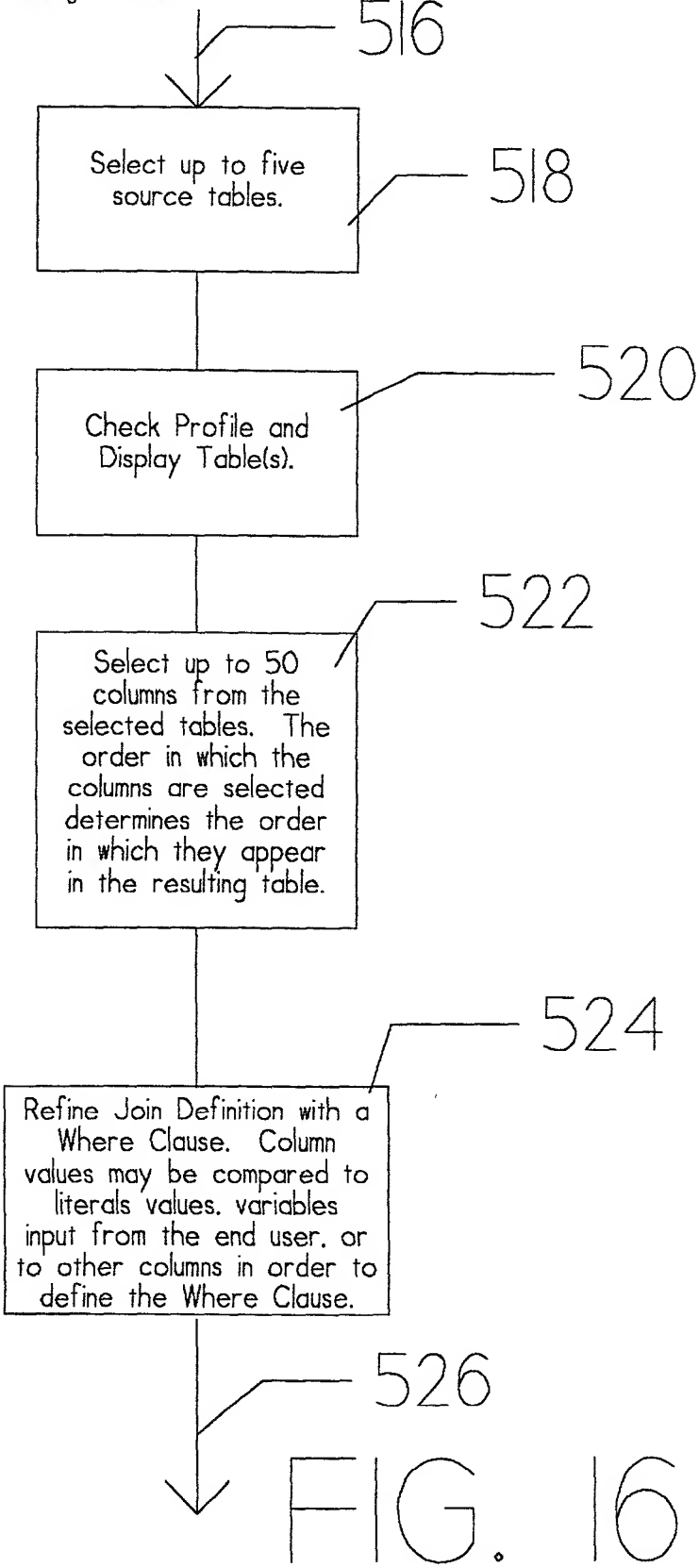
516
Select up to five source tables.
518
Check Profile and Display Table(s).
520
Select up to 50 columns from the selected tables. The order in which the columns are selected determines the order in which they appear in the resulting table.
522
Refine Join Definition with a Where Clause. Column values may be compared to literals values. variables input from the end user. or to other columns in order to define the Where Clause.
524
526

FIG. 16

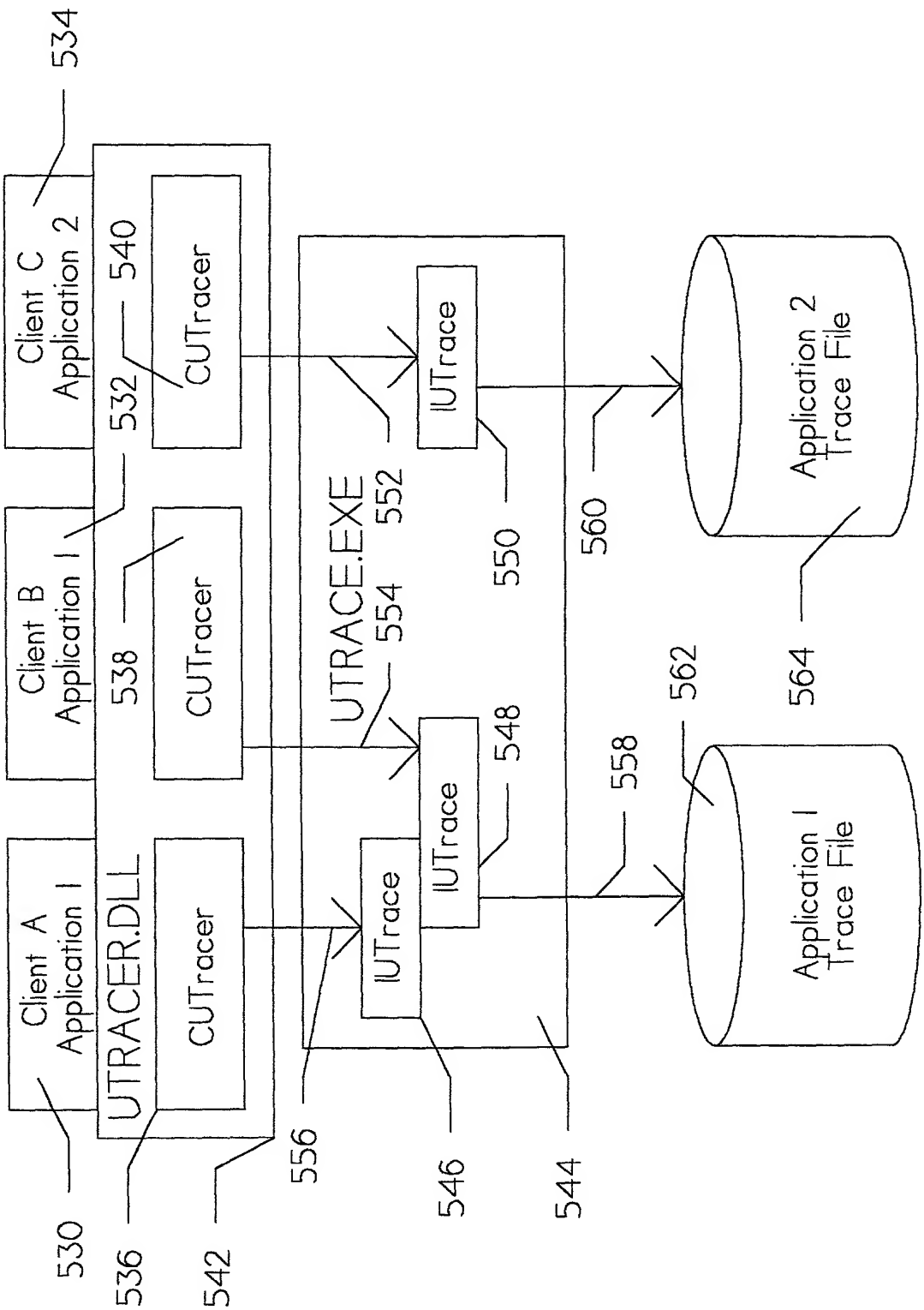
Client A Application 1
Client B Application 1
Client C Application 2
UTRACER.DLL
CUTracer
CUTracer
CUTracer
UTRACE.EXE
IUTrace
IUTrace
IUTrace
Application 1 Trace File
Application 2 Trace File
530
532
534
536
538
540
542
544
546
548
550
552
554
556
558
560
562
564

FIG. 17

Patent Application
Filing Date: 12/21/2001
Attorney's Docket No. RA-5447 (33012/335/101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing 18 of 40
Express Mail No. ET970414370US
Customer Assignment No. 27516

HKLM\SOFTWARE\UNISYS\UTRACE

APPNAME -- Subkey matching the name of the application 565

- ENABLETRACE -- DWORD value indication a Boolean (1=trace,, 0=no trace).
- MAXENTRIES -- DWORD value indicating the maximum number of entries in the trace file. If missing, then no upper limit is imposed.
- FORMATFLAGS -- DWORD value indicating message formatting flags.
- POLICYFLAGS -- DWORD value indicating trace policy flags set for the application.
- TRACELEVEL -- DWORD value indicating a trace level. 0 = no trace.
- TRACEPATH -- String value indicating the directory path for the trace files.
- REGTRACE -- A string value containing the HKLM\Software sub key to trace for this application. Blank or missing for no registry trace.
- COMPONENT -- A subkey for a specific component of the application.
  - POLICYFLAGS -- Value indicating component level trace policy flags
  - TRACELEVEL -- DWORD Value indicating a trace level. 0 = no trace.
  - VERSIONTRACE-- String value specifying executable component name for version information tracing.

FIG. 18

Express Mail No. ET970414370US
Customer Assignment No. 27516

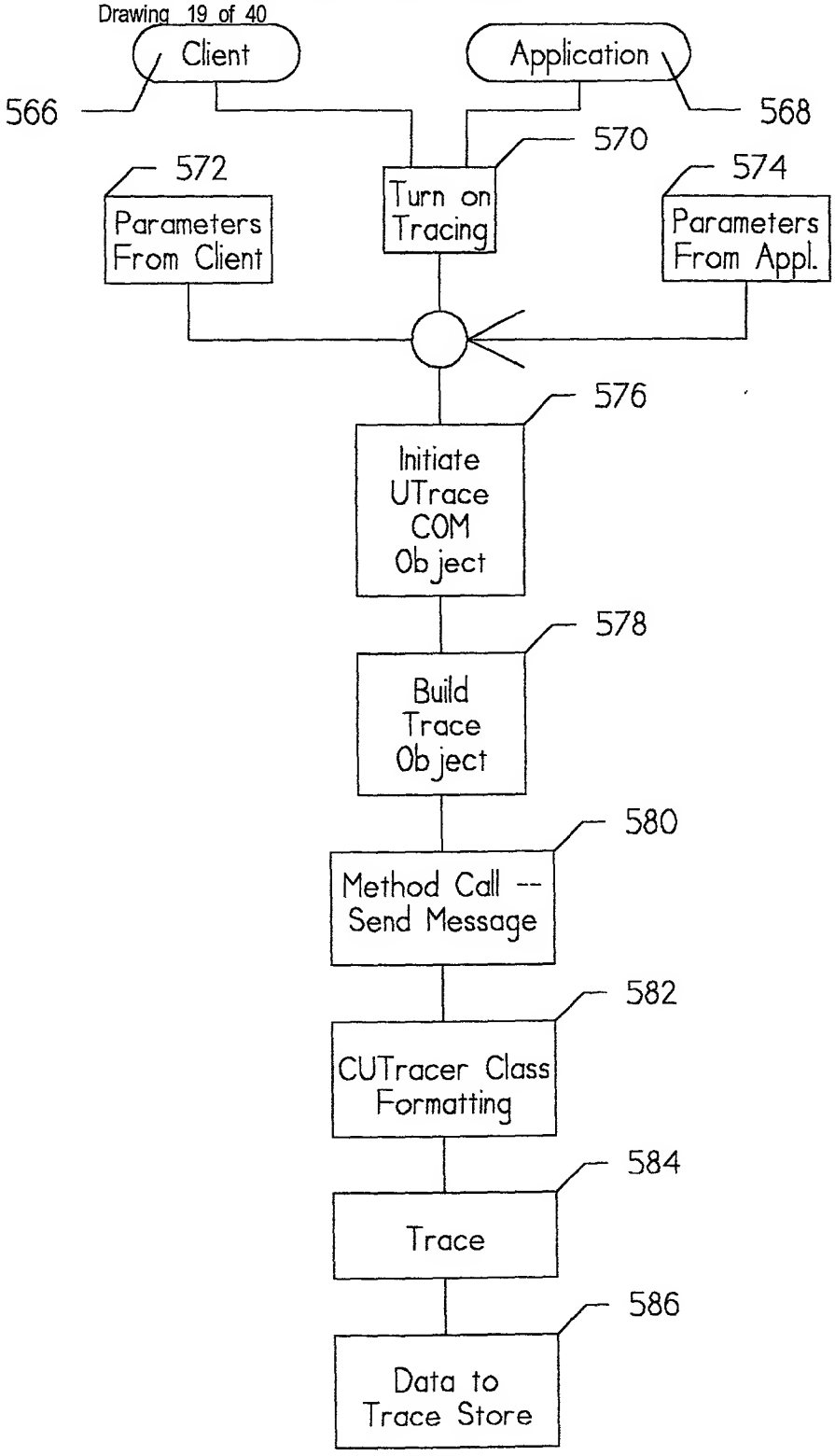

FIG. 19

```
#define CI_TRACE_VERSION        0x1
#define CI_TRACE_ERROR          0x2
#define CI_TRACE_INTERFACE      0x4
#define CI_TRACE_FLOW           0x8
#define CI_TRACE_DETAIL         0x10
```

FIG. 20A

```
if (m_trace. Active(C)_TRACE_DETAIL))
m_trace<<"MY Detailed Trace information"<<Localvariable<<traceit
```

FIG. 20B

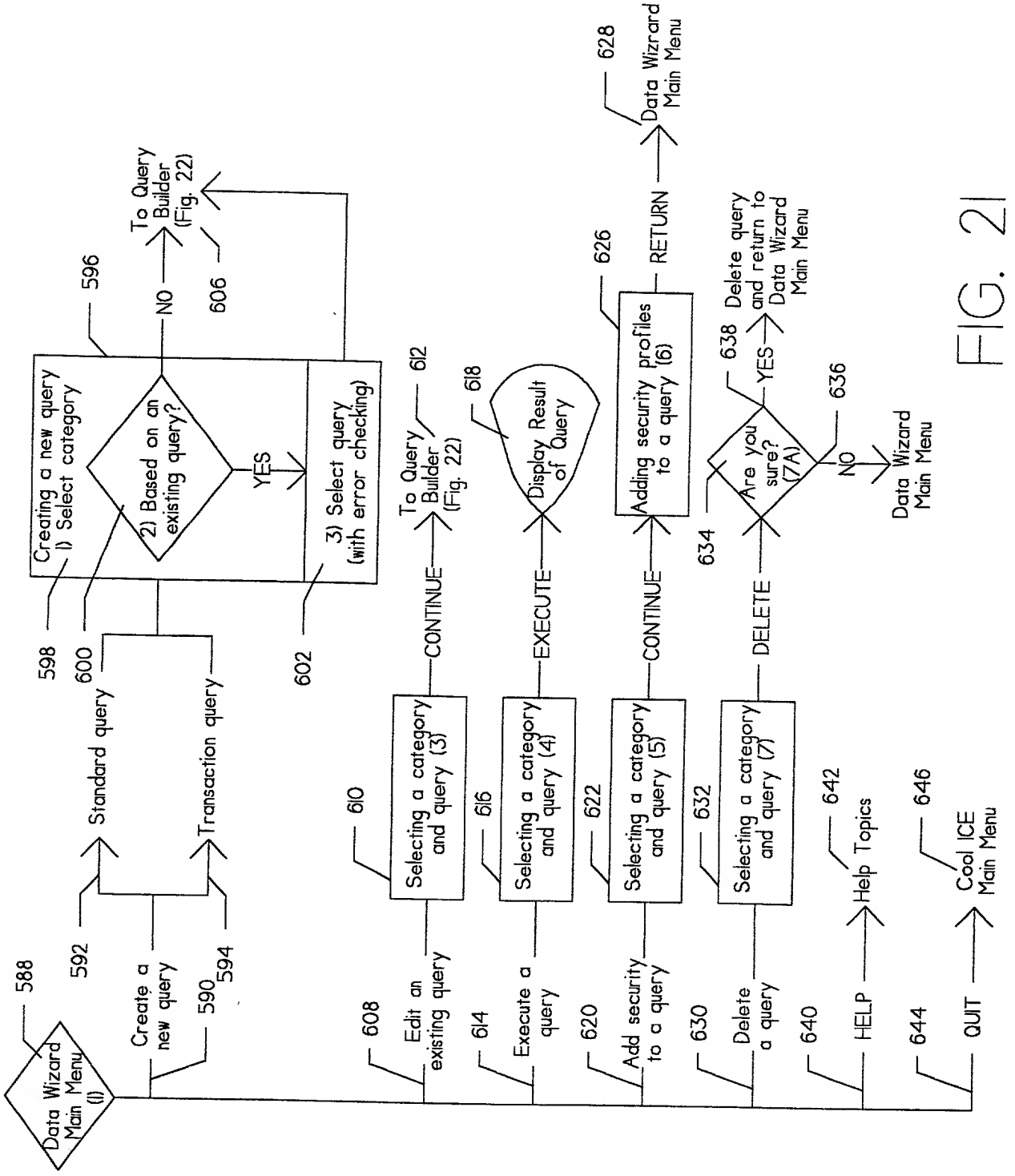
588
Data Wizard Main Menu (1)
592
Create a new query
590
594
Standard query
Transaction query
598
600
602
Creating a new query 1) Select category
2) Based on an existing query?
YES
3) Select query (with error checking)
596
NO
To Query Builder (Fig. 22)
606
608
Edit an existing query
610
Selecting a category and query (3)
CONTINUE
To Query Builder (Fig. 22)
612
614
Execute a query
616
Selecting a category and query (4)
EXECUTE
Display Result of Query
618
620
Add security to a query
622
Selecting a category and query (5)
CONTINUE
Adding security profiles to a query (6)
626
RETURN
Data Wizard Main Menu
628
630
Delete a query
632
Selecting a category and query (7)
DELETE
634
Are you sure? (7A)
YES
Delete query and return to Data Wizard Main Menu
638
NO
636
Data Wizard Main Menu
640
HELP
642
Help Topics
644
QUIT
646
Cool ICE Main Menu

FIG. 21

Express Mail No. ET970414370US
Customer Assignment No. 27516

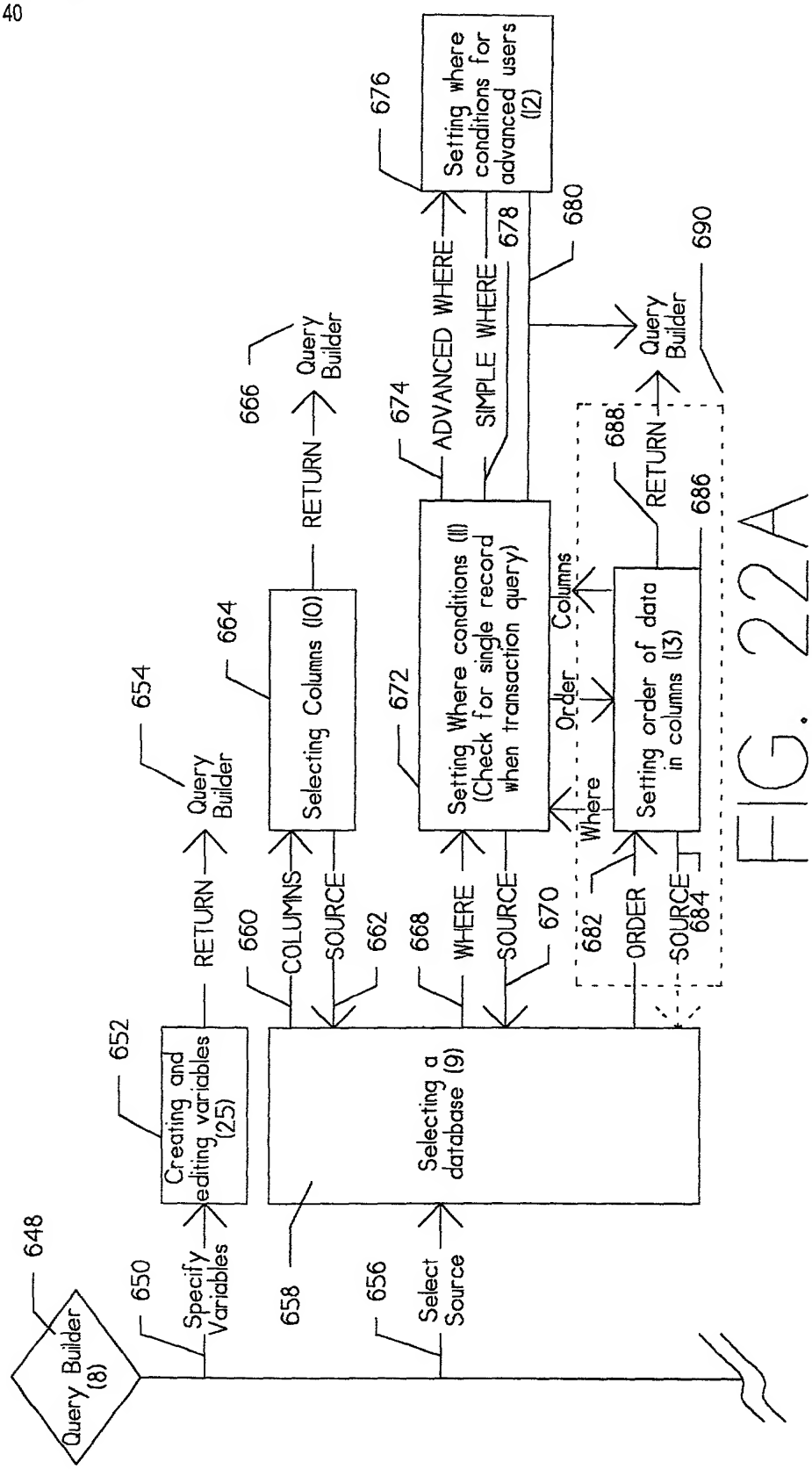

FIG. 22A

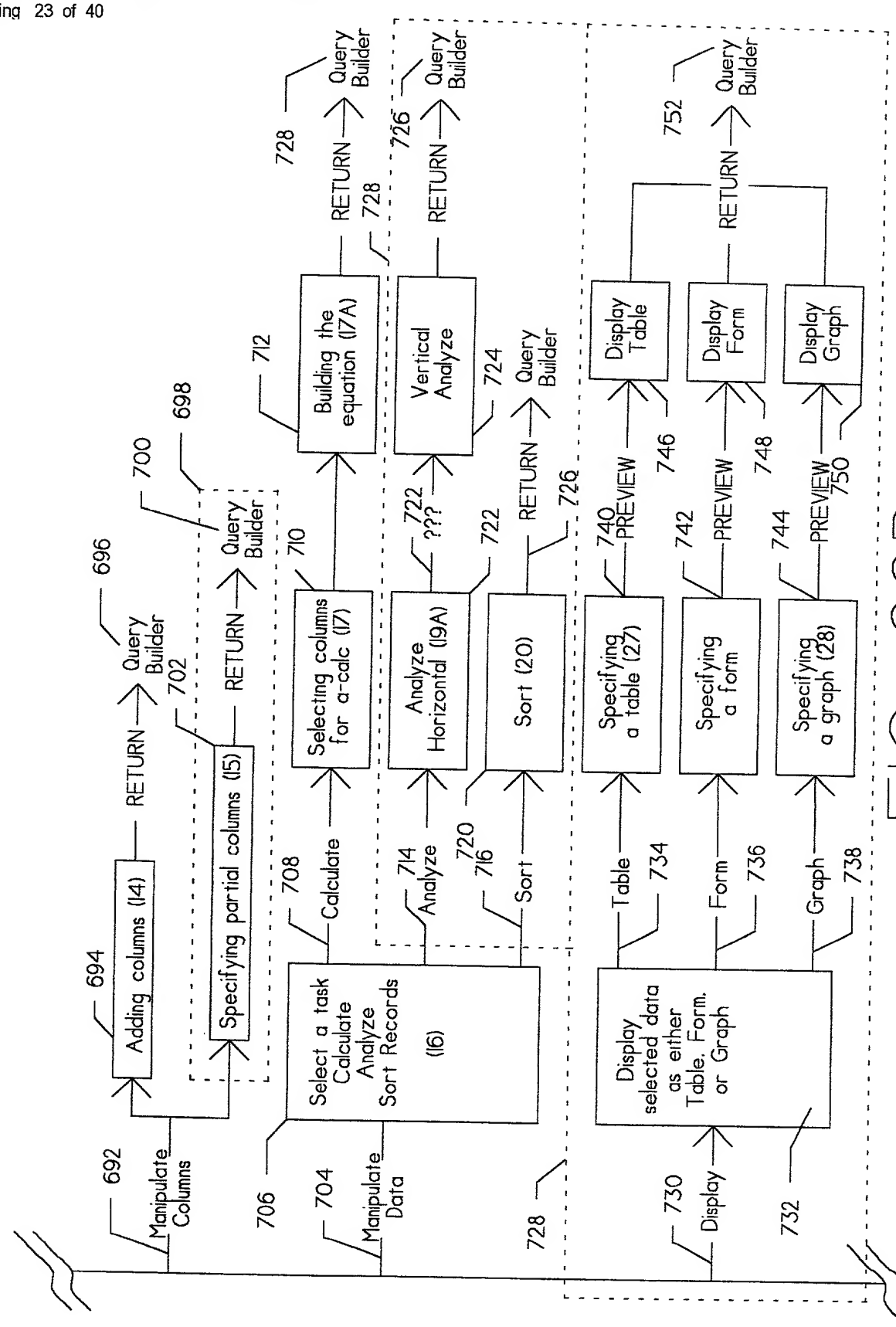
692
Manipulate Columns
694
Adding columns (14)
RETURN
696
Query Builder
698
700
Query Builder
702
Specifying partial columns (15)
RETURN
704
Manipulate Data
706
Select a task
Calculate
Analyze
Sort Records
(16)
708
Calculate
710
Selecting columns for a-calc (17)
712
Building the equation (17A)
RETURN
728
Query Builder
714
Analyze
720
716
Sort
722
Analyze Horizontal (19A)
722
???
724
Vertical Analyze
RETURN
726
Query Builder
722
Sort (20)
RETURN
726
Query Builder
728
730
Display
Table
Form
Graph
732
734
736
738
740
PREVIEW
742
PREVIEW
744
PREVIEW
746
748
750
Specifying a table (27)
Specifying a form
Specifying a graph (28)
Display Table
Display Form
Display Graph
RETURN
752
Query Builder

FIG. 22B

Express Mail No. ET970414370US
Customer Assignment No. 27516

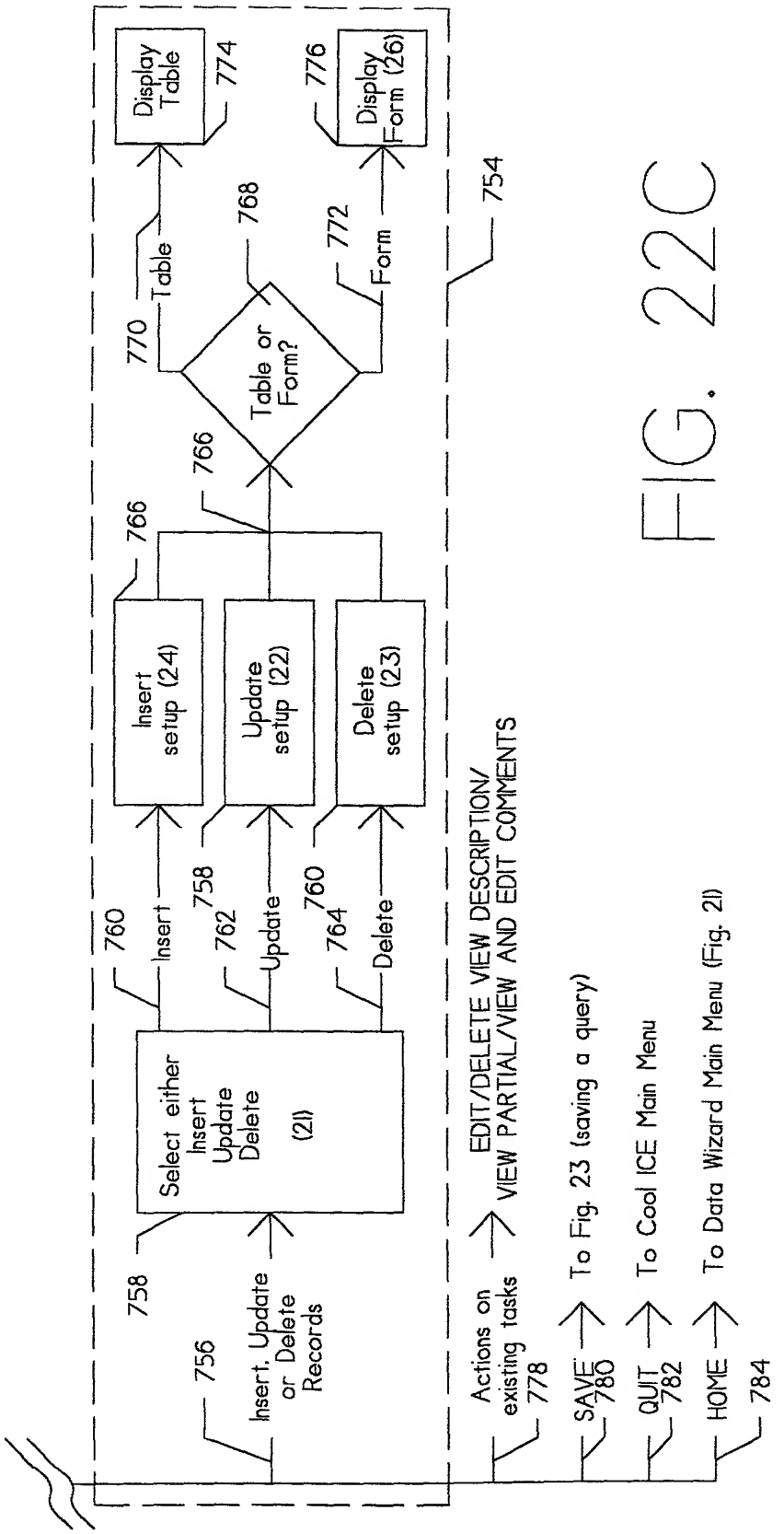

FIG. 22C

Express Mail No. ET970414370US
Customer Assignment No. 27516

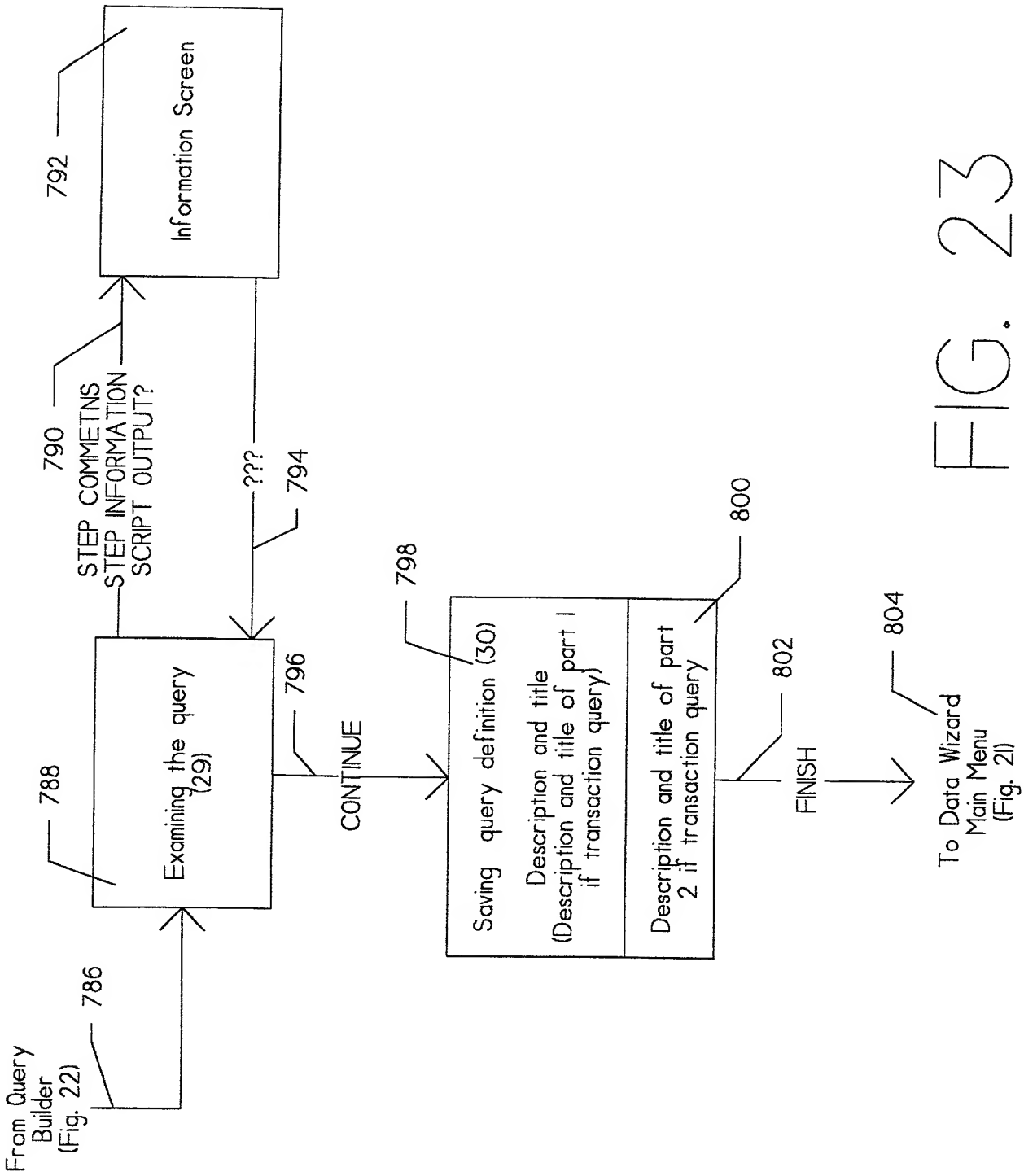

FIG. 23

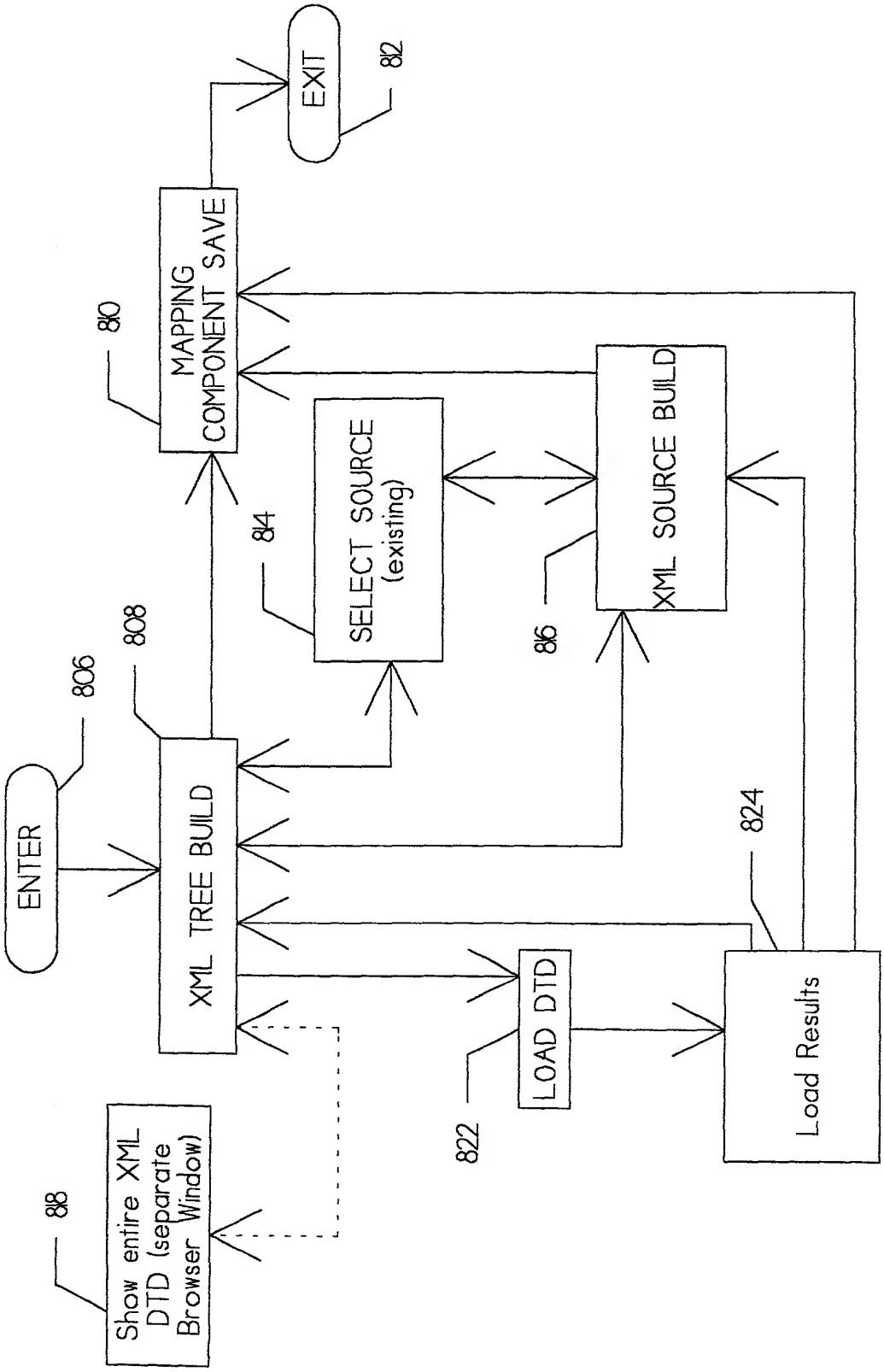
ENTER
806
XML TREE BUILD
808
MAPPING COMPONENT SAVE
810
EXIT
812
SELECT SOURCE (existing)
814
XML SOURCE BUILD
816
LOAD DTD
822
Load Results
824
Show entire XML DTD (separate Browser Window)
818

FIG. 24

Patent Application
Filing Date: 12/21/2001
Attorney's Docket No. RA-5447 (33012/335/101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing 27 of 40
Express Mail No. ET970414370US
Customer Assignment No. 27516

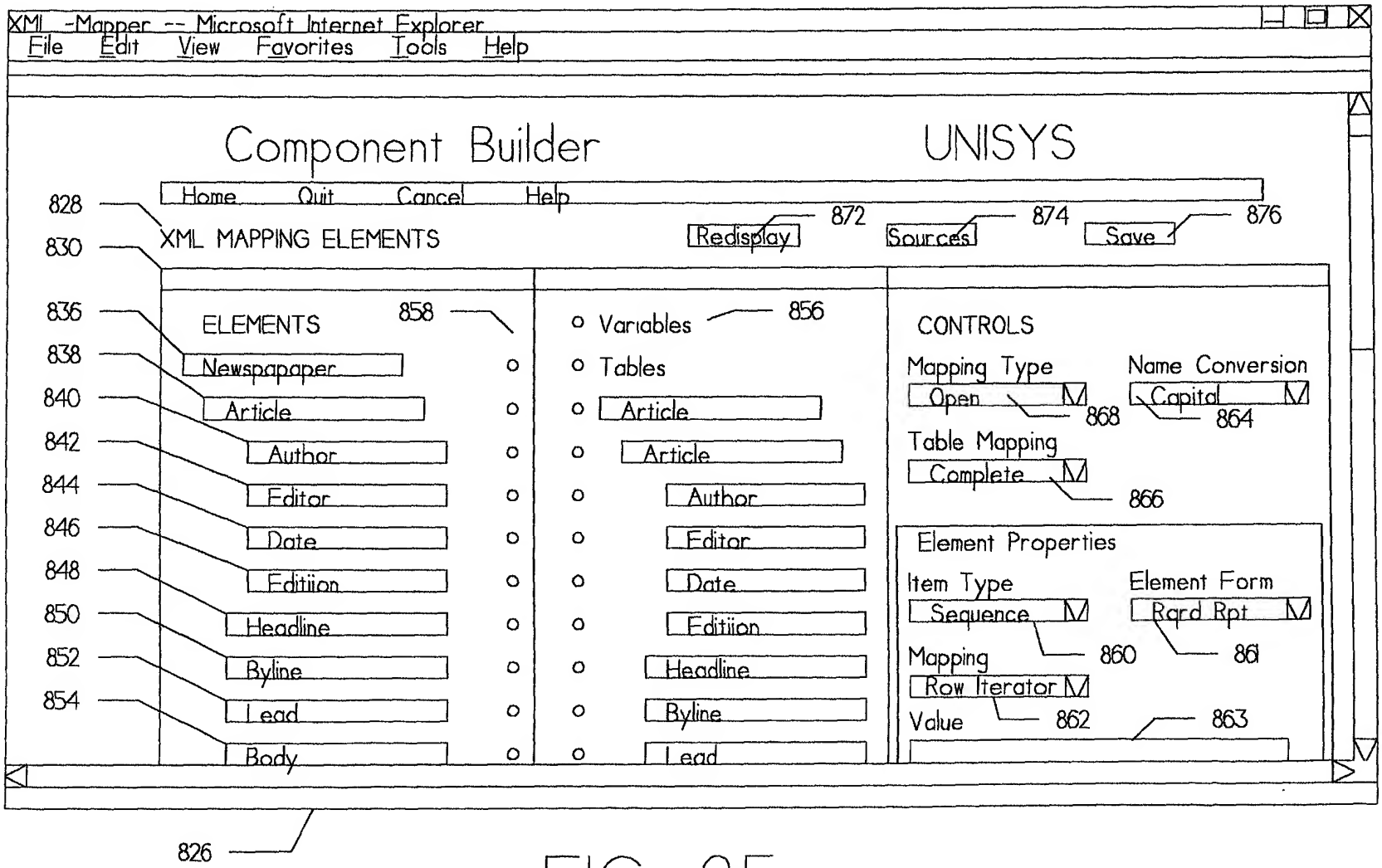

FIG. 25

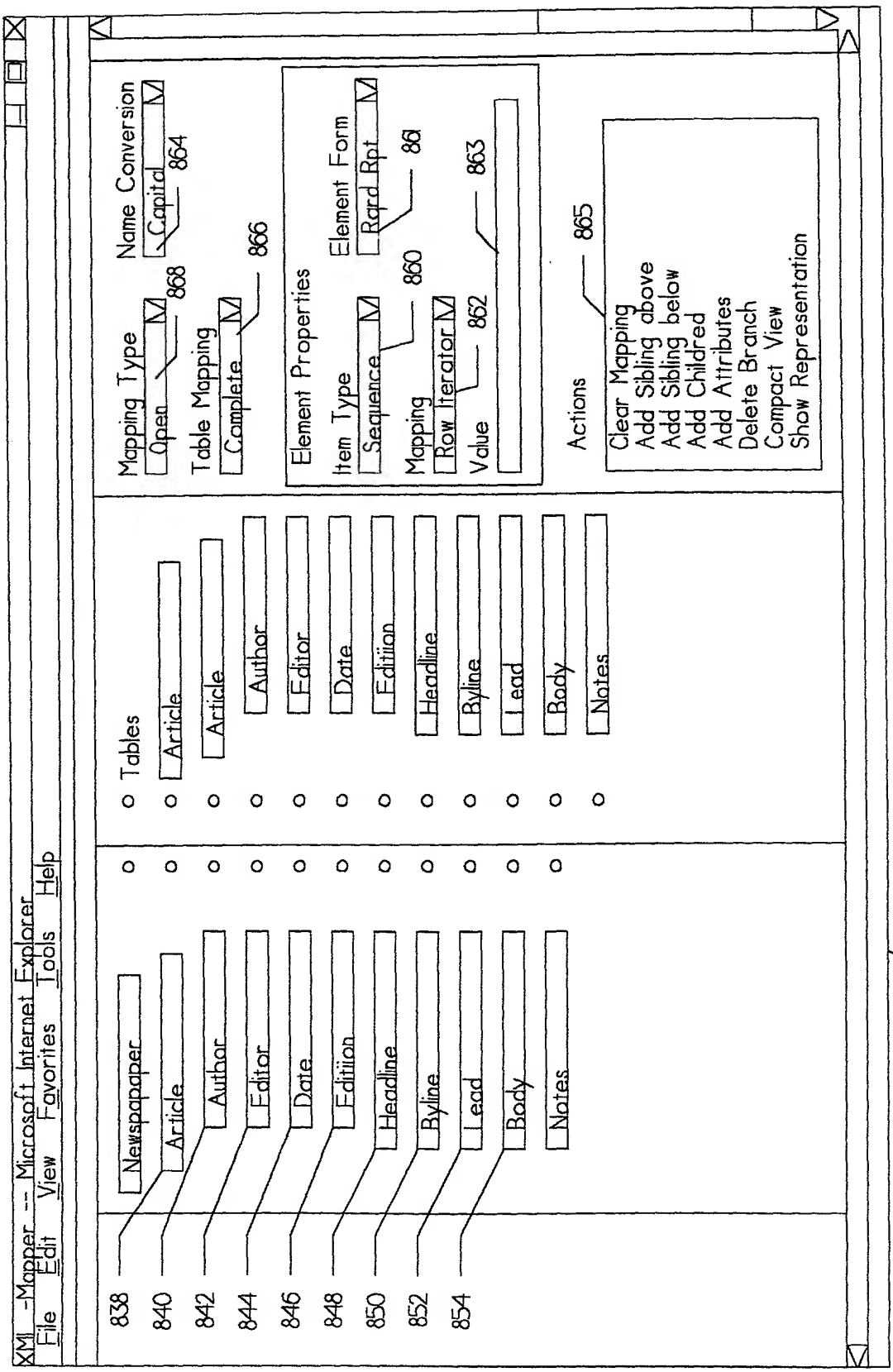
XML -Mapper -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
Newspapaper
Article
Author
Editor
Date
Edition
Headline
Byline
Lead
Body
Notes
838
840
842
844
846
848
850
852
854
Tables
Article
Article
Author
Editor
Date
Edition
Headline
Byline
Lead
Body
Notes
Mapping Type
Open
868
Table Mapping
Complete
866
Name Conversion
Capital
864
Element Properties
Item Type
Sequence
860
Mapping
Row Iterator
Value
862
Element Form
Rqrd Rpt
861
863
Actions
865
Clear Mapping
Add Sibling above
Add Sibling below
Add Children
Add Attributes
Delete Branch
Compact View
Show Representation
826

FIG. 26

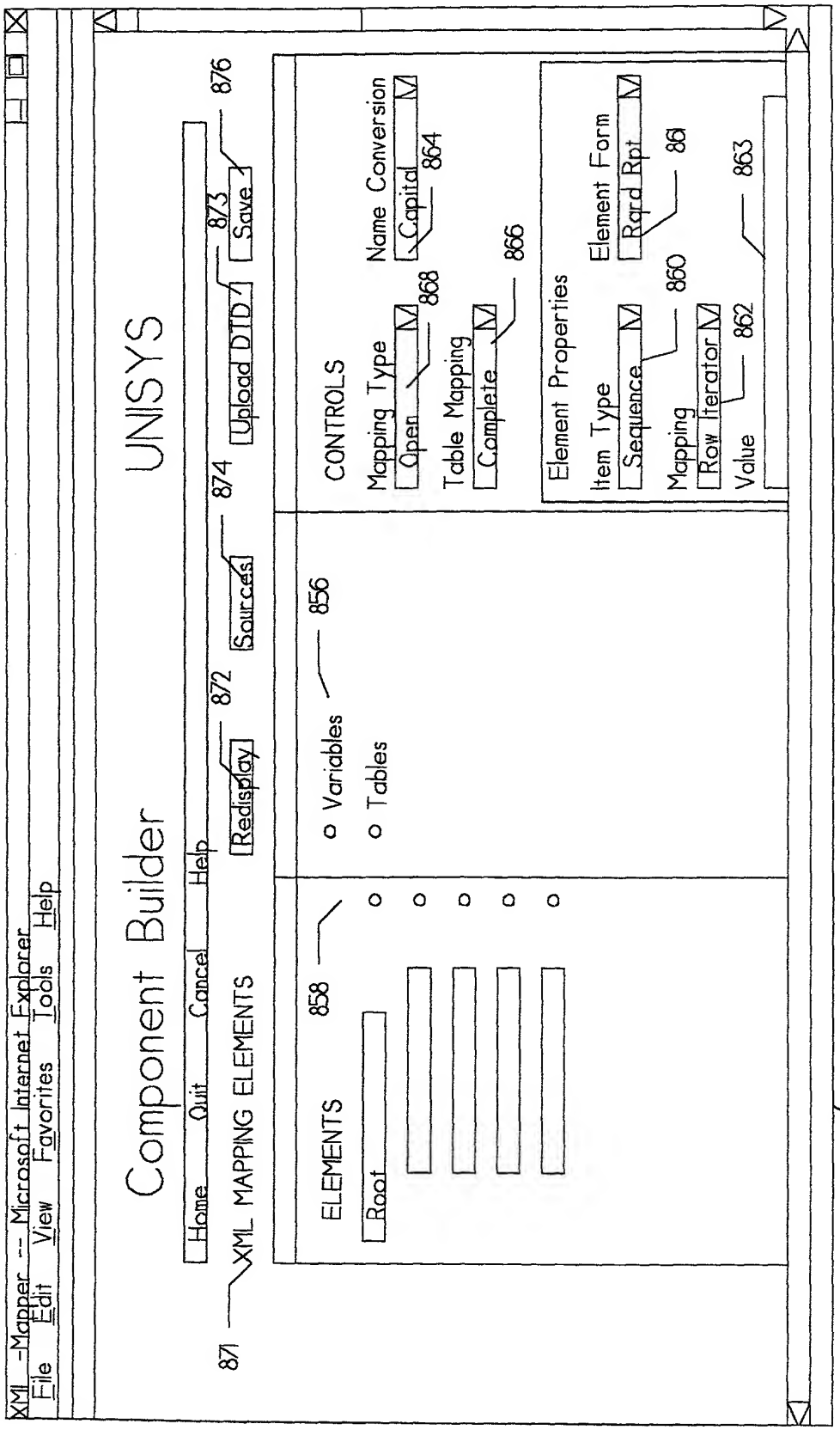
XML -Mapper -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
Component Builder
UNISYS
Home Quit Cancel Help
Redisplay
Sources
Upload DTD
Save
XML MAPPING ELEMENTS
ELEMENTS
Root
Variables
Tables
CONTROLS
Mapping Type
Open
Table Mapping
Complete
Name Conversion
Capital
Element Properties
Item Type
Sequence
Mapping
Row Iterator
Value
Element Form
Rqrd Rpt
871
872
873
874
876
856
858
860
861
862
863
864
866
868
870

FIG. 27

Express Mail No. ET970414370US
Customer Assignment No. 27516

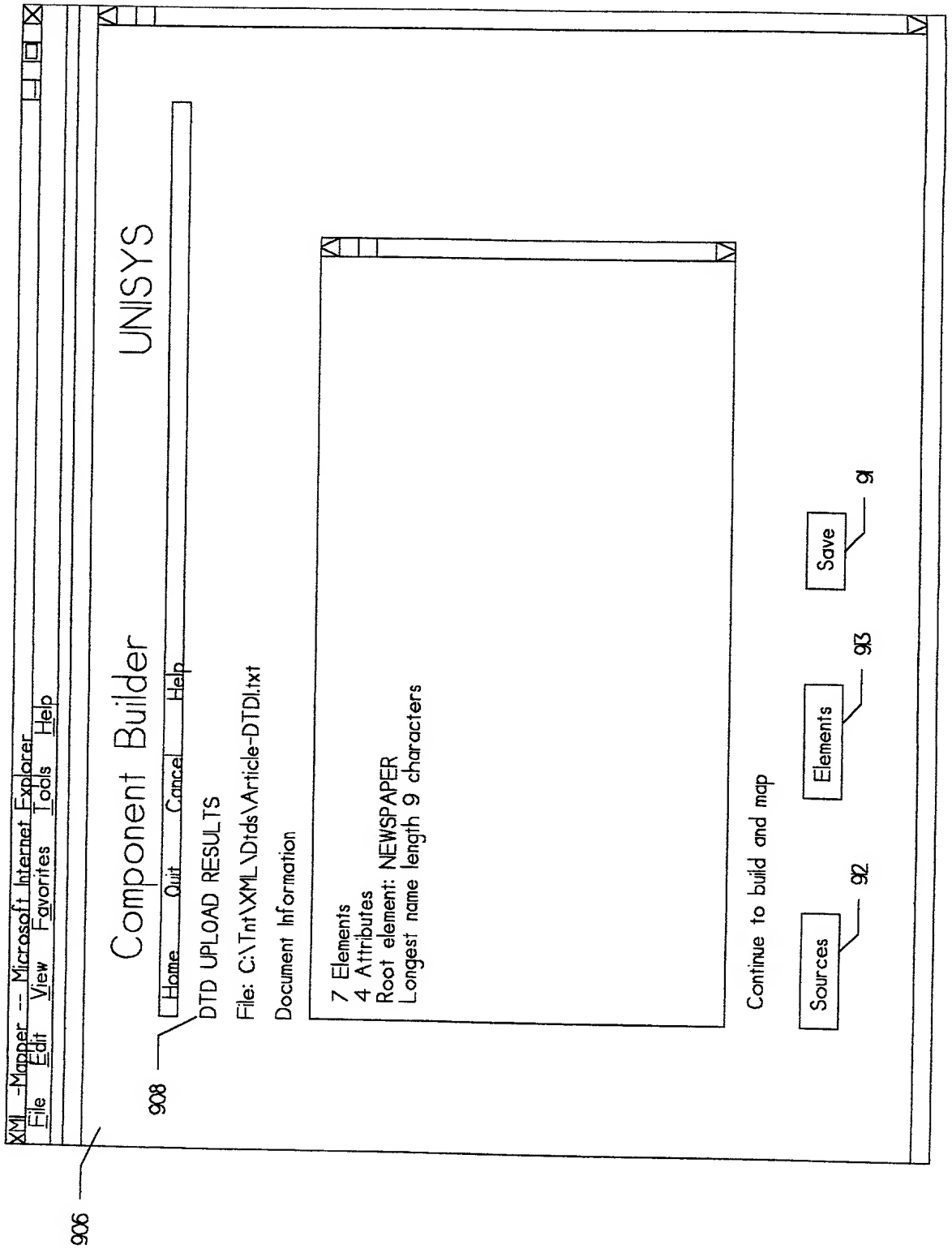

FIG. 28

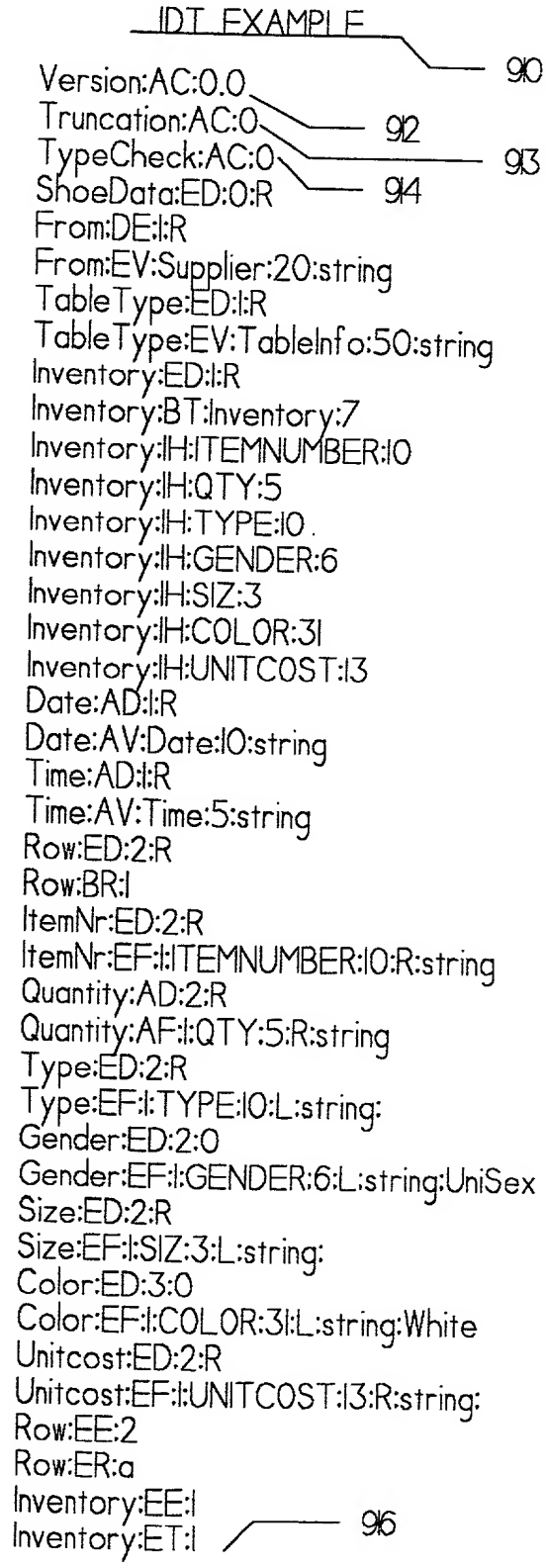
IDT EXAMPLE
90
Version:AC:0.0
Truncation:AC:0
92
TypeCheck:AC:0
93
ShoeData:ED:0:R
94
From:DE:1:R
From:EV:Supplier:20:string
TableType:ED:1:R
TableType:EV:TableInfo:50:string
Inventory:ED:1:R
Inventory:BT:Inventory:7
Inventory:IH:ITEMNUMBER:10
Inventory:IH:QTY:5
Inventory:IH:TYPE:10
Inventory:IH:GENDER:6
Inventory:IH:SIZ:3
Inventory:IH:COLOR:31
Inventory:IH:UNITCOST:13
Date:AD:1:R
Date:AV:Date:10:string
Time:AD:1:R
Time:AV:Time:5:string
Row:ED:2:R
Row:BR:1
ItemNr:ED:2:R
ItemNr:EF:1:ITEMNUMBER:10:R:string
Quantity:AD:2:R
Quantity:AF:1:QTY:5:R:string
Type:ED:2:R
Type:EF:1:TYPE:10:L:string:
Gender:ED:2:0
Gender:EF:1:GENDER:6:L:string:UniSex
Size:ED:2:R
Size:EF:1:SIZ:3:L:string:
Color:ED:3:0
Color:EF:1:COLOR:31:L:string:White
Unitcost:ED:2:R
Unitcost:EF:1:UNITCOST:13:R:string:
Row:EE:2
Row:ER:a
Inventory:EE:1
Inventory:ET:1
96

FIG. 29

Express Mail No. ET970414370US
Customer Assignment No. 27516
Filing Date: 12/21/2001
Attorney's Docket No. RA-5447 (33012/335/101)
Application: Thomas N. Turba et al.
Charles A. Johnson Reg. No. 20,852 651-635-7702
Drawing 32 of 40

DTD EXAMPLE 918

```
<!DOCTYPE ShoeData [

  <!ELEMENT ShoeData (From, TableType, Inventory)>
  <!ELEMENT From (#PCDATA)>
  <!ELEMENT TableType (#PCDATA)>
  <!ELEMENT Inventory (Row+)>
  <!ATTLIST Inventory Date CDATA #REQUIRED>
  <!ATTLIST Inventory Time CDATA #REQUIRED>
  <!ELEMENT Row (ItemNr, Type, Gener?, Size, Color?, Unitcost)+>
  <!ELEMENT ItemNr (#PCDATA)>
  <!ATTLIST ItemNr Quantity CDATA #REQUIRED>
  <!ELEMENT Type (#PCDATA)>
  <!ELEMENT Gender (#PCDATA)>
  <!ELEMENT Size (#PCDATA)>
  <!ELEMENT Color (#PCDATA)>
  <!ELEMENT Unitcost (#PCDATA)>
```

FIG. 30

XML INPUT DOCUMENT EXAMPLE — 920

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<ShoeData>
<From>Roseville Store</From>
<TableType>Low Inventory Count</TableType>
<Inventory Date="2000-12-05" Time="11:51">
<Row>
<ItemNr Quantity="0">32335</ItemNr>
<Type>Tennis</Type>
<Gender>Mens</Gender>
<Size>6</Size>
<Color>White/Zen Grey/New Spruce</Color>
<Unitcost>25.00</Unitcost>
</Row>
<Row>
<ItemNr Quantity="0">35410</ItemNr>
<Type>Running</Type>
<Gender>Womens</Gender>
<Size>5</Size>
<Color>White/Zen Grey/Neptune Blue</Color>
<Unitcost>19.70</Unitcost>
</Row>
<Row>
<ItemNr Quantity="0">3541K</ItemNr>
<Type>Running</Type>
<Gender>Womens</Gender>
<Size>6</Size>
<Color>White/Zen Grey/Neptune Blue</Color>
<Unitcost>19.70</Unitcost>
</Row>
<Row>
<ItemNr Quantity="2">35420</ItemNr>
<Type>Running</Type>
<Gender>Womens</Gender>
<Size>5</Size>
<Color>White/Chlorine Blue/Hot Lime</Color>
<Unitcost>19.70</Unitcost>
</Row>
<Row>
<ItemNr Quantity="1">3742K</ItemNr>
<Type>Golf</Type>
<Gender>Womens</Gender>
<Size>8</Size>
<Color>White/Fluorescent Pink</Color>
<Unitcost>35.00</Unitcost>
</Row>
</Inventory>
</ShoeData>
<Color>White/Black-Hot Lime. Neo Teal</Color>
<Unitcost>40.00</Unitcost>
</Row>
<Row>
<ItemNr Quantity="0">32474</ItemNr>
<Type>Tennis</Type>
<Gender>Womens</Gender>
<Size>8</Size>
<Color>White/Light Marine-Ultramarine</Color>
<Unitcost>25.00</Unitcost>
</Row>
<Row>
<ItemNr Quantity="1">35310</ItemNr>
<Type>Running</Type>
<Gender>Mens</Gender>
<Size>6</Size>
```

FIG. 31

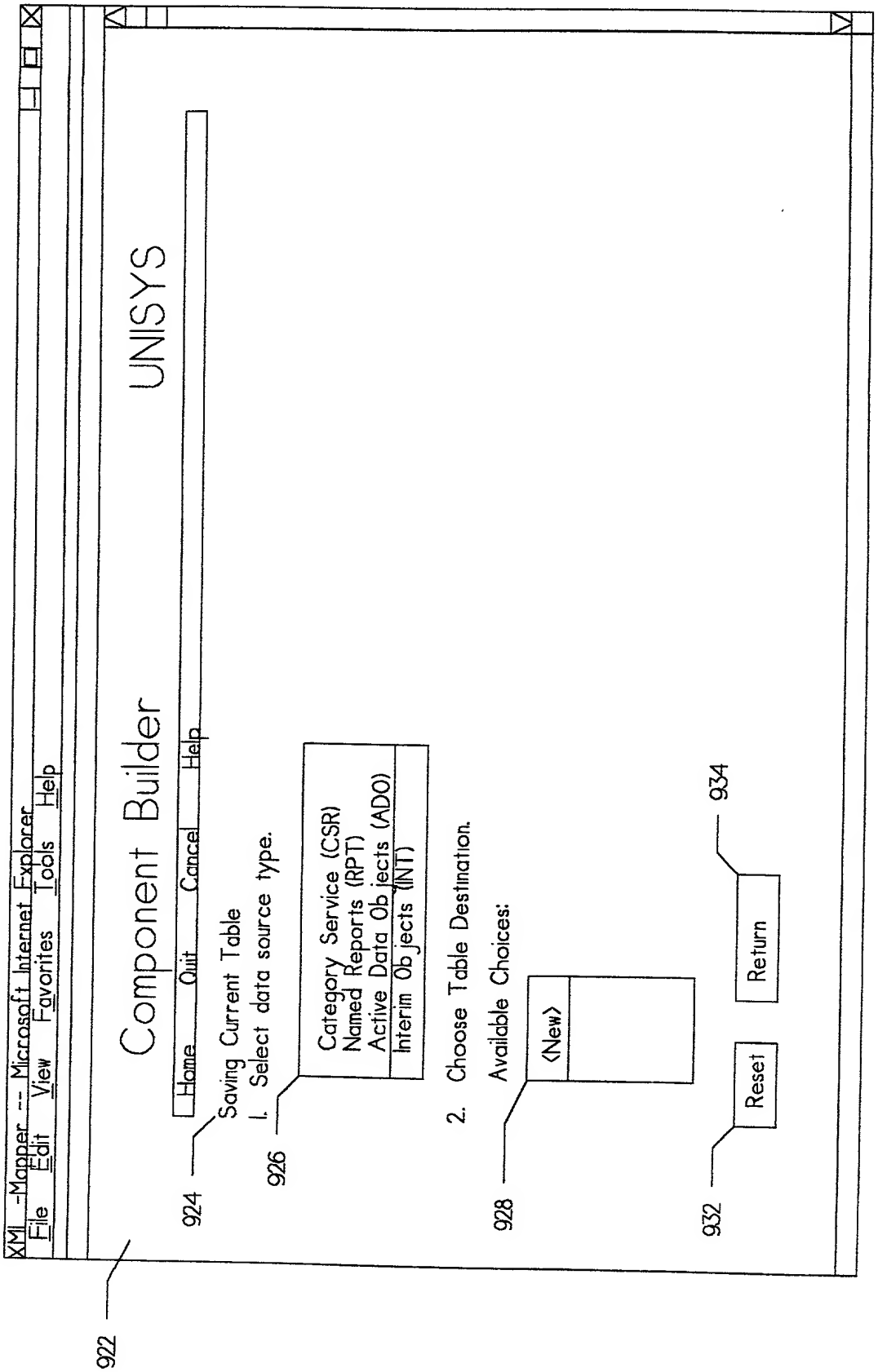
922
XMI -Mapper -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
Component Builder
UNISYS
Home Quit Cancel Help
924
Saving Current Table
1. Select data source type.
926
Category Service (CSR)
Named Reports (RPT)
Active Data Objects (ADO)
Interim Objects (INT)
2. Choose Table Destination.
Available Choices:
928
<New>
932
Reset
934
Return

FIG. 32

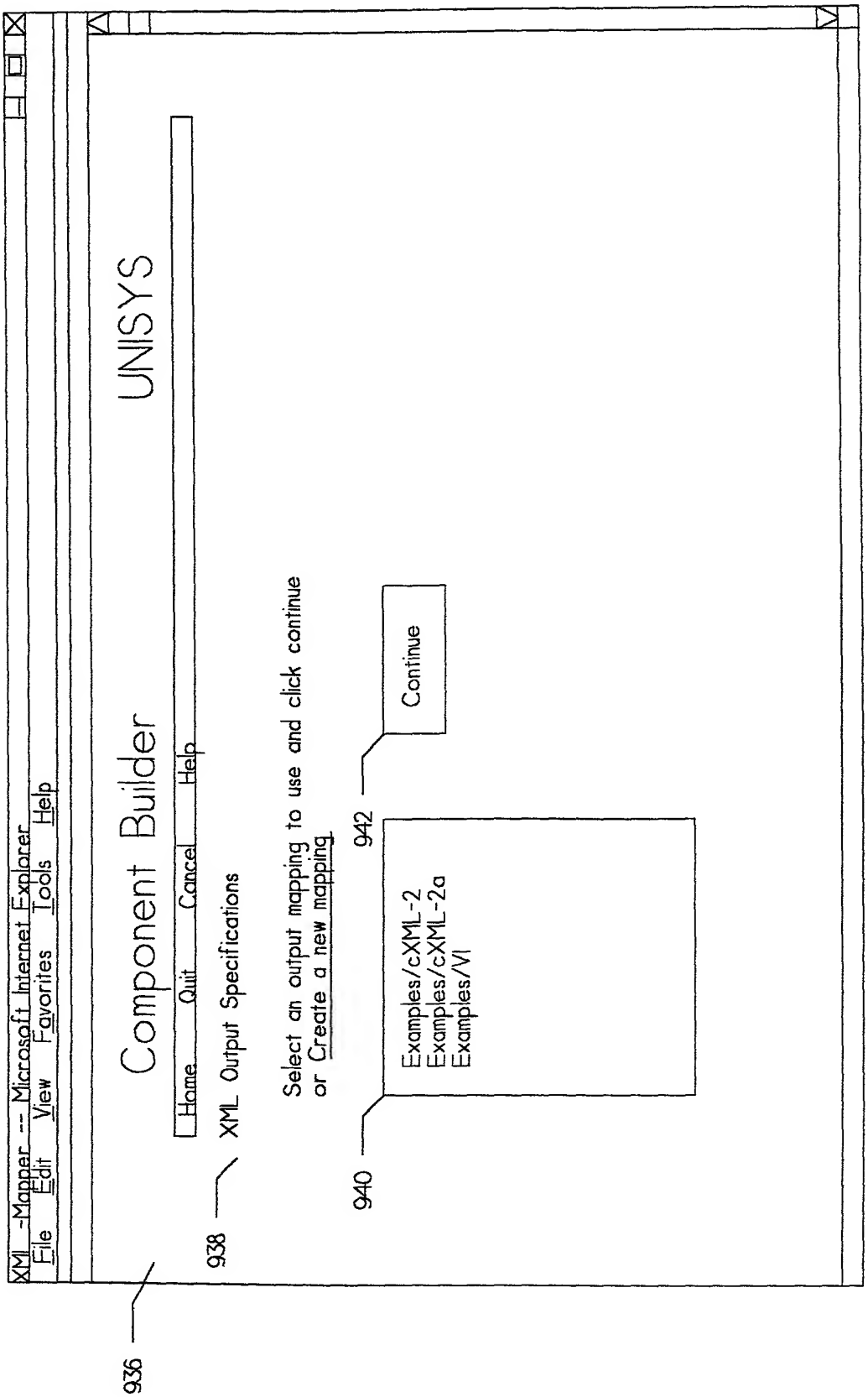
XML -Mapper -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
UNISYS
Component Builder
Home Quit Cancel Help
XML Output Specifications
Select an output mapping to use and click continue
or Create a new mapping
Continue
Examples/cXML-2
Examples/cXML-2a
Examples/VI
936
938
940
942

FIG. 33

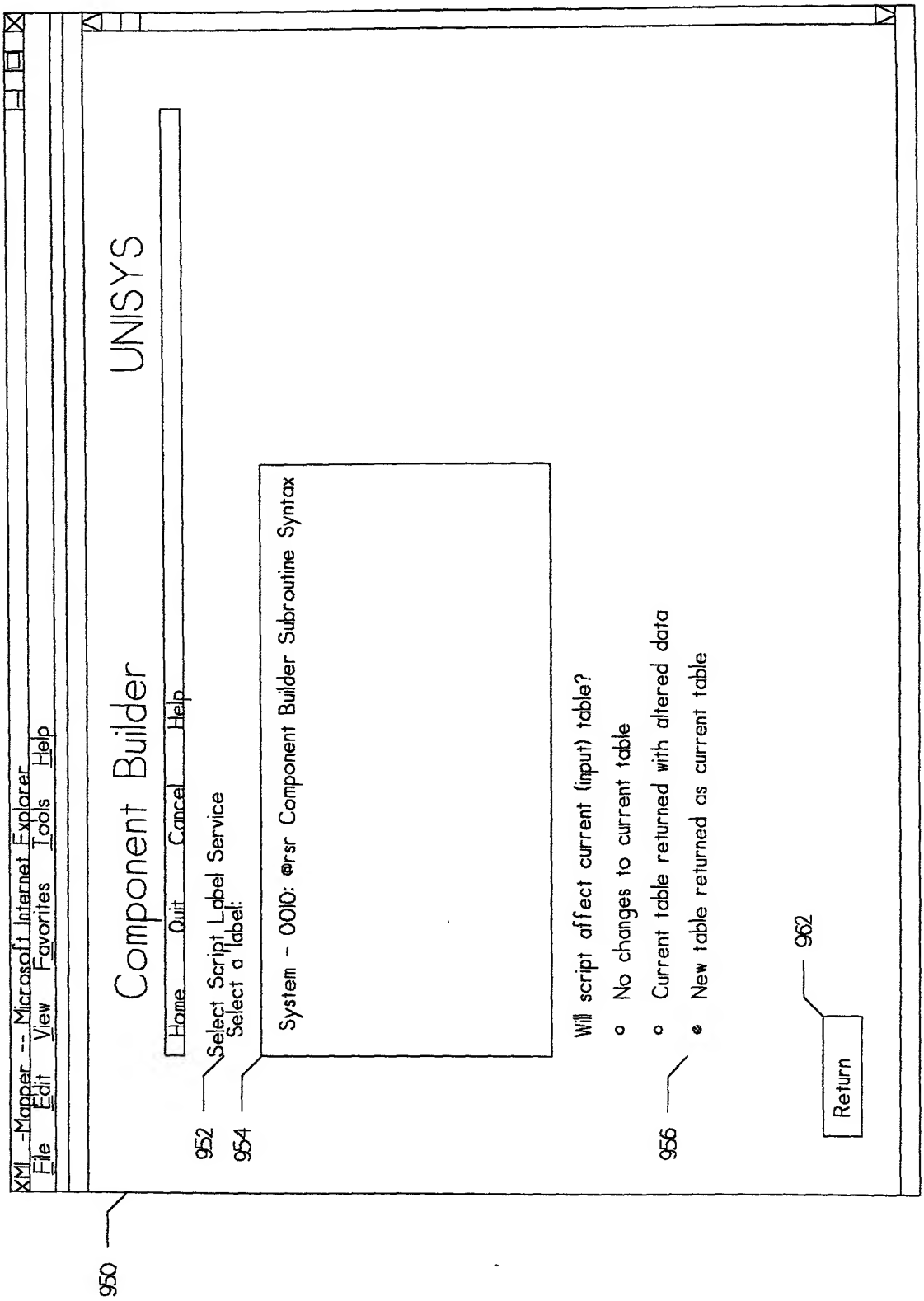
950
XML -Mapper -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
Component Builder
UNISYS
Home Quit Cancel Help
952
Select Script Label Service
Select a label:
954
System - 0010: @rsr Component Builder Subroutine Syntax
Will script affect current (input) table?
o No changes to current table
o Current table returned with altered data
• New table returned as current table
956
962
Return

FIG. 34

Express Mail No. ET970414370US
Customer Assignment No. 27516

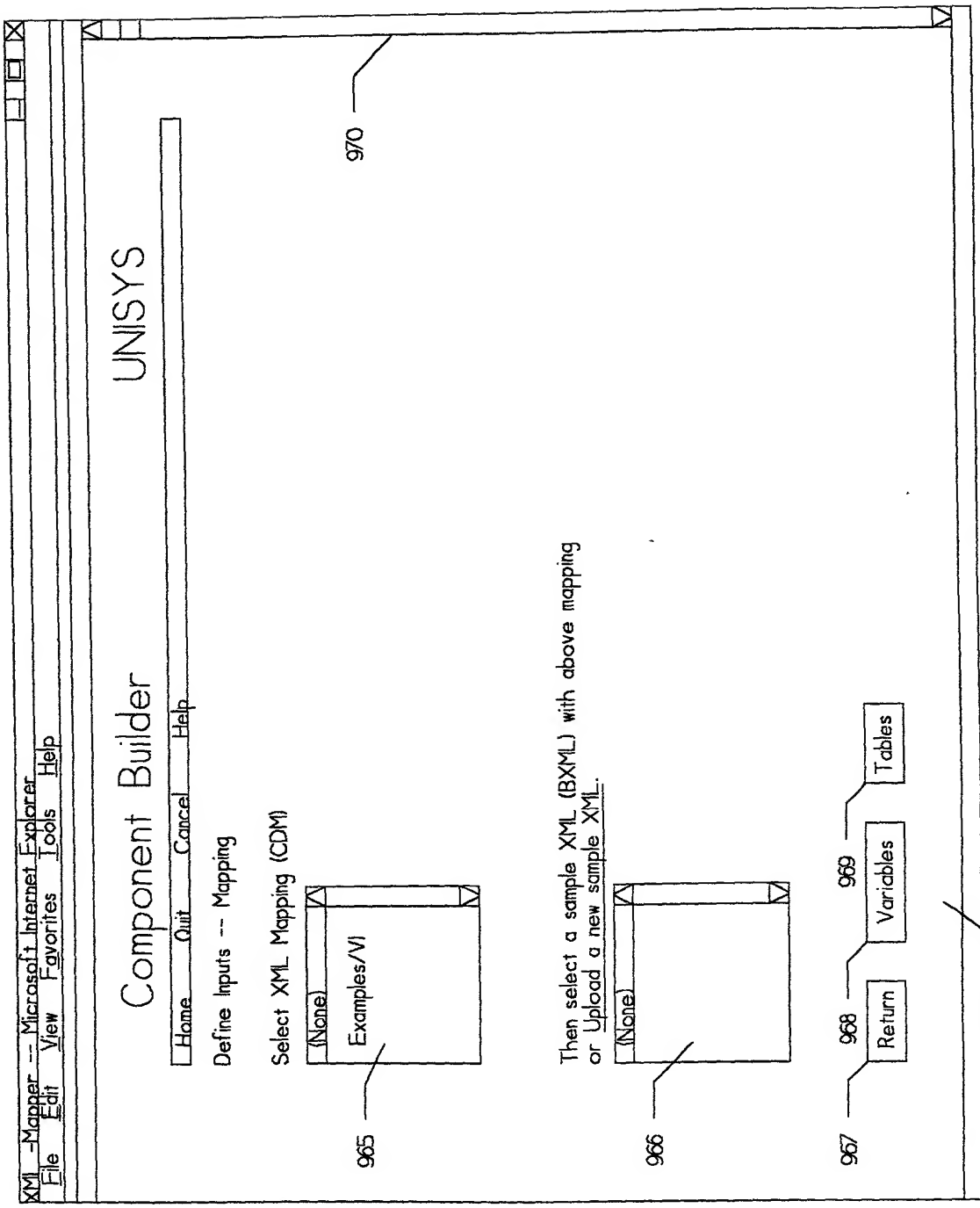

FIG. 35

Express Mail No. ET970414370US
Customer Assignment No. 27516

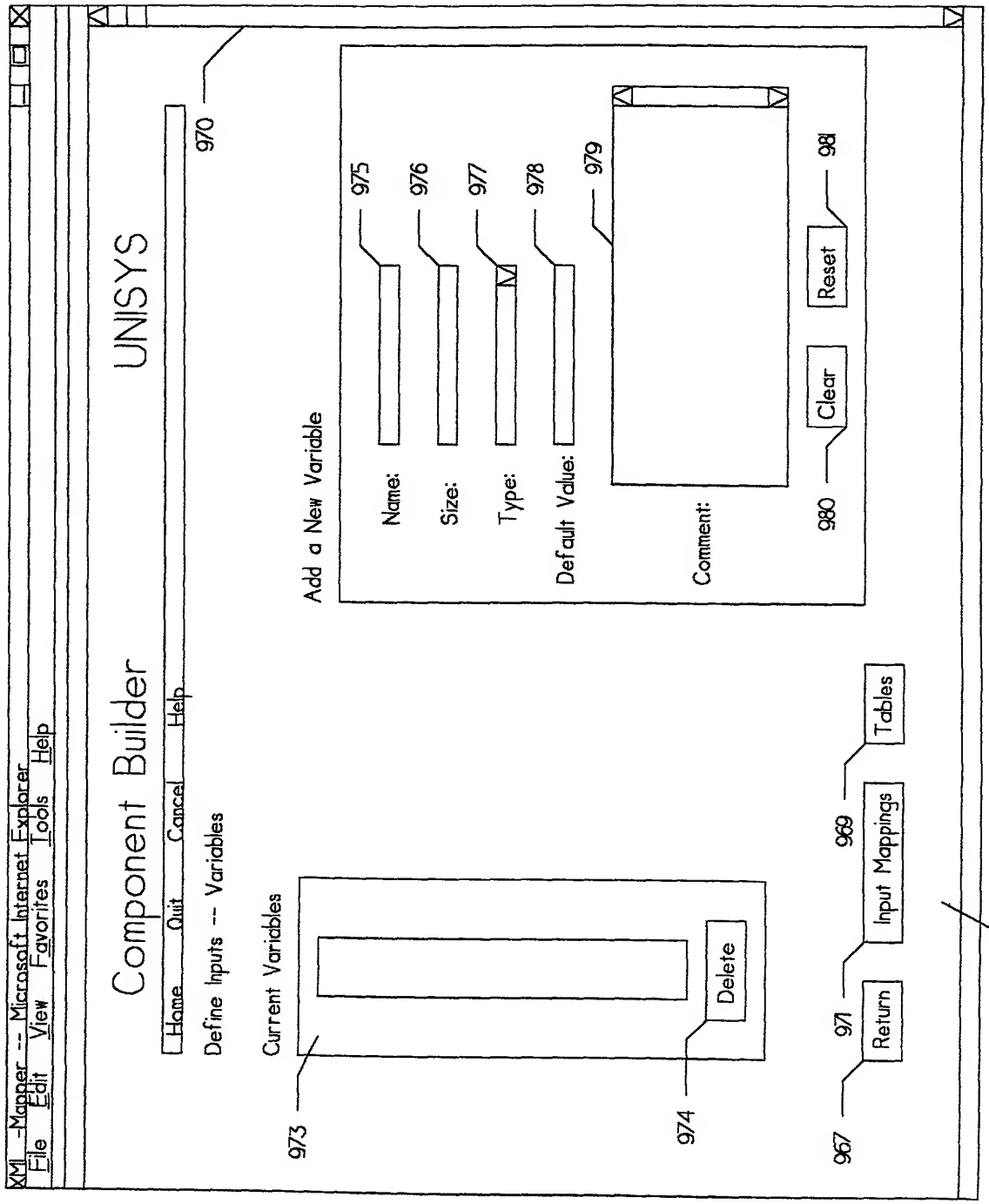

FIG. 36

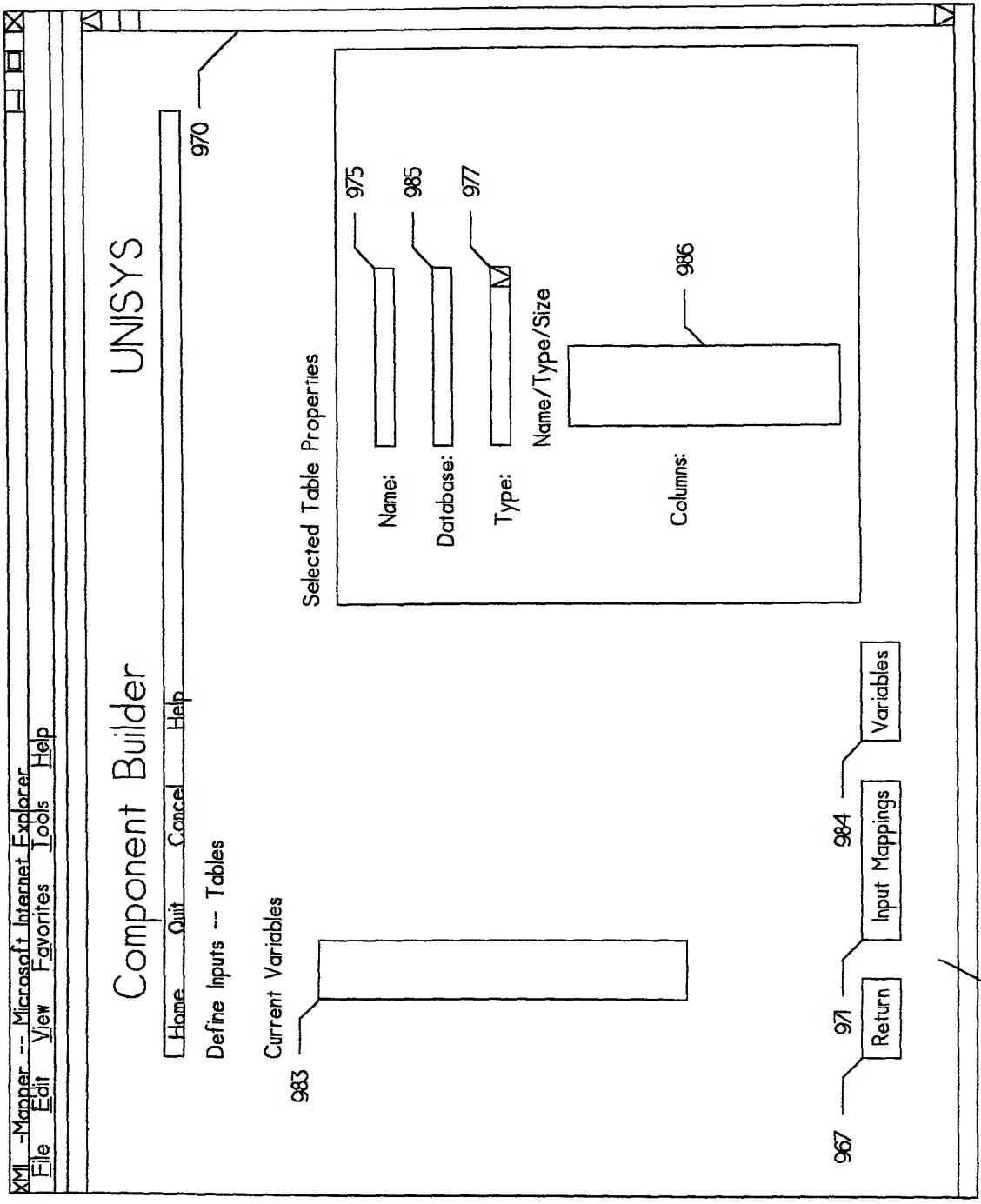
XMI -Mapper -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
Component Builder
UNISYS
970
Home Quit Cancel Help
Define Inputs -- Tables
Current Variables
983
Selected Table Properties
975
Name:
985
Database:
977
Type:
Name/Type/Size
986
Columns:
984
Variables
Input Mappings
971
Return
967
982

FIG. 37

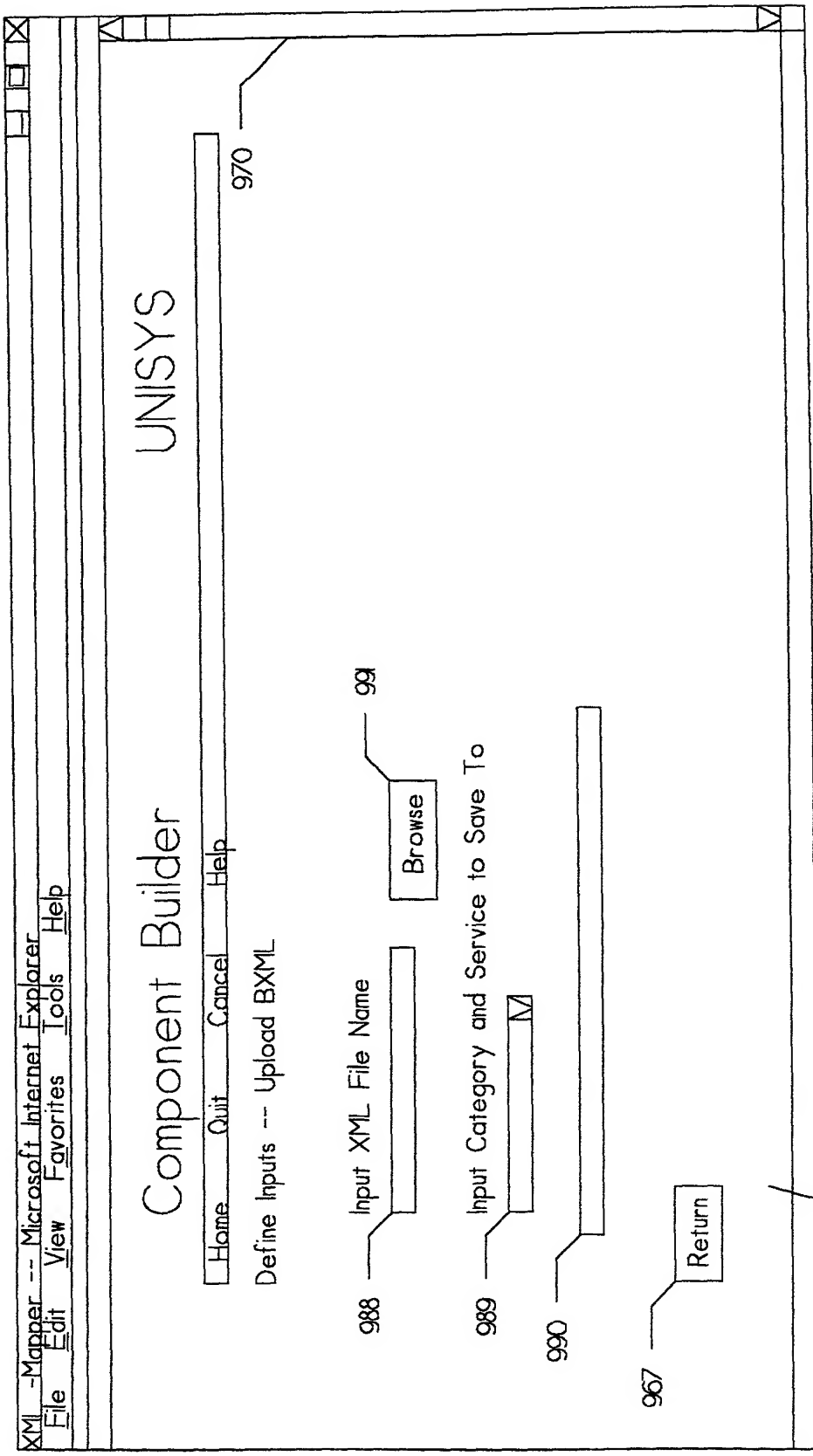
XML -Mapper -- Microsoft Internet Explorer
File Edit View Favorites Tools Help
UNISYS
970
Component Builder
Home Quit Cancel Help
Define Inputs -- Upload BXML
991
Browse
Input XML File Name
988
Input Category and Service to Save To
989
990
967
Return
987

FIG. 38